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American Petroleum Institute
1220 L Street, Northwest
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Monthly Statistical Report

Prepared by the Finance, Accounting, and Statistics Department

Vol. 14, No.10

NOVEMBER 12, 1990

OCTOBER 1990

SUMMARY

Total deliveries, following several months of year-to-year increases and an only-slight decline in September, fell substantially in October. The decline indicates that a demand response to higher petroleum prices over the past three months is becoming apparent, though we believe that the decline in underlying consumption was probably less than the drop in deliveries. This would reverse the experience of recent prior months, when part of the deliveries increases for some products likely represented additions to inventories of distributors and end users rather than increases in actual consumption. The decline of 4.9 percent, or roughly 850 thousand B/D, contrasts with an estimated underlying trend earlier in the year of perhaps a half percent decline. The drop in actual consumption was probably about half of the month's deliveries decrease.

All major products except kerosine jet fuel shared in the deliveries decrease. October's gasoline deliveries followed September's estimated 1.5 percent decline with a 2.7 percent decrease, while distillate deliveries' 5.5 percent drop contrasted with increases averaging nearly 5 percent over July through September. Residual fuel oil deliveries were off by over 22 percent. Deliveries of kerosine jet fuel, however, jumped 9.5 percent, continuing their substantial strength of the past several months. Kerosine jet fuel deliveries, running at levels among the highest ever, have been averaging nearly 7 percent higher than a year ago.

Domestic crude oil production declined only about 3 percent in October, compared with a rate of about 6 percent or 450 thousand B/D earlier in the year. Alaskan production actually rose slightly, in contrast to its earlier decline trend of 90-100 thousand B/D, as the summer's maintenance and enhancement programs on the North Slope were completed and as an accelerated well fracturing program continued. Lower 48 production declined 4.1 percent or about 230 thousand B/D, year to year.

Total imports fell close to 18 percent or 1.5 million B/D from a year ago for October. Crude oil imports were down over 900 thousand B/D as refiners continued to draw on crude oil inventories. All major products contributed to a decline in product imports, which fell by nearly one quarter to 1.6 million B/D.

With the slackening in deliveries, input to distillation units dropped 2.7 percent versus last October, following the strong levels of recent prior months. Output of kerosine jet fuel, however, rose more than 10 percent; smaller gains for gasoline and distillate were more than offset by a 21 percent decline for residual fuel oil.

Total stocks fell a greater-than-average 24 million barrels for October, with crude stocks dropping 9 million barrels. Over the past three months, crude oil stocks have been drawn down by 36 million barrels, or nearly 10 percent, but still exceed last year's level. Distillate stocks ended the month at 138 million barrels, about 9 million barrels above average for October.

PRODUCT SUPPLIED [1]

Gasoline

HIGHER PRICES DAMPEN DEMAND. The rise in U.S. retail gasoline prices over the past three months, though less than the increase for crude oil, has apparently been large enough to have a measurable effect on gasoline consumption—an effect reflected in October's deliveries. Following a 1.5 percent, year-to-year decline in September, gasoline deliveries dropped 2.7 percent in October to 7.1 million B/D. This was the lowest level of deliveries for October in five years. Deliveries had already averaged a lesser, 0.9 percent decline for the first seven months of this year, before supply interruptions and tensions in the Middle East led to substantial increases in petroleum prices worldwide.

U.S. retail gasoline prices for October, averaged over the month, were about 30 cents per gallon higher than before the Iraqi invasion (while crude oil prices averaged more than $19 per barrel, or around 45 cents per gallon, higher). Though one month's decline in deliveries could be the result of many sources of variation, we believe that October's greater-than-previous decrease largely reflects reduced demand in response to higher prices.

Further evidence is provided by recently-released data on travel during August. In the months prior to August, miles traveled had been running at around a 3 percent growth rate.

	API ESTIMATES OCTOBER		YEAR-TO-DATE	
	Million B/D	Percent Change	Million B/D	Percent Change
Total domestic deliveries	16.5	(4.9)	17.0	(1.2)
Crude production[v]	7.2	(3.0)	7.2	(5.6)
Total imports[v]	6.8	(17.9)	8.2	2.8
Stocks (million bbl)[v]	1,092	1.2	na	na

August's increase slipped to 2 percent, and preliminary indicators for September suggest a further dropoff in travel's growth rate.

Distillates

STRONG GAINS END, DELIVERIES FALL. Following several months of year-to-year gains in deliveries that exceeded any likely underlying consumption trend, October's distillate deliveries fell 5.5 percent, or about 175 thousand B/D. The contrast with the sizeable increases in prior months (averaging nearly 5 percent over the July-to-September period) is consistent with our belief that the previous growth reflected additions to the inventories of distributors and end users, rather than any substantial strength in underlying consumption. Similarly, October's deliveries' drop may have partly overstated the decline in actual consumption, assuming that nonprimary stocks, built up earlier in the season, rose less than usual during October.

Warmer weather was responsible for a small part of October's decline in deliveries. Though, for the U.S. as a whole, the month averaged only slightly warmer than a year ago, for the Northeast, the weather was 15 to 20 percent warmer than last October. The effect on heating oil consumption, however, would account for only about 50 thousand B/D of the year-to-year decline in distillate deliveries.

Higher prices (heating oil, for example, according to government data, averaged about $1.30 per gallon during October, versus a little less than 90 cents a year ago) have also undoubtedly encouraged conservation, though perhaps not by as much as the month's deliveries decline might suggest.

An article on distillate supply capability during the current heating season is included in the following pages of this issue of the *Monthly*.

Residual Fuel Oil

OFF OVER 22 PERCENT. Residual fuel deliveries fell 22.4 percent in October. The decline (coming despite 4-5 percent growth in nationwide electricity generation) is attributed both to fuel substitution, which was aided by mild weather in the East, and to large utility inventories of resid. Furthermore, the impact of the drop in oil imports during the month is believed to have softened demand for resid as a bunker fuel.

Both price and weather are important variables in a utility's fuel choice. The potential for price-induced fuel switching by electric utilities from resid to natural gas is often more limited during the fall and winter months. Gas supplies are usually diverted at this time for use in commercial and residential heating; consequently, utilities use more residual fuel. However, weather in New England and Mid-Atlantic states was 15-20 percent warmer than last October, and this is believed to have freed up supplies of the currently more economical natural gas for utility use.

Despite declining utility use of residual fuel over the first seven months of the year, buying was strong during the late spring and early summer when utilities were taking advantage of low prices. As a result, utility stocks nationwide were up more than 6 percent at the time of the Iraqi invasion, with larger builds coming in the high-use states of New York, Massachusetts and California. This increase in stocks contrasts with a roughly 20 percent decline in resid consumption by utilities for the year as of August 1. While more current data aren't available on utility fuel inventories, it is believed that these higher secondary stocks have allowed some utility buyers to stay out of spot markets (where prices were up 60-70 percent from the end of July).

The impact of lower levels of petroleum imports in recent months is being felt in bunker fuel markets. By weight, crude and petroleum product imports have represented two-thirds or more of all ocean-borne imports into the U.S. While some of the import decline since the invasion was offset by rebounding Alaskan production (also brought into U.S. mainland ports via tanker), ocean-borne shipments fell during the month and likely had a direct consequence on bunker fuel demand.

Kerosine Jet Fuel

STRONG DELIVERIES CONTRAST WITH OTHER PRODUCTS. Of major refined products, kerosine jet fuel was the only one to see an increase in deliveries during October. The 9.5 percent rate of growth was more than twice as large as the year-to-date average and, at 1,371 thousand b/d, deliveries were among the highest ever observed (with the exception of last December when product was diverted for blending with heating fuel). Still, given growth in airline miles flown and continued strong military demand, the deliveries increase was only 2-3 percent higher than what would have been expected based on estimated consumption.

Despite full-fare tickets which were 5-10 percent higher than in July, airlines were able to encourage domestic travel via a larger assortment of travel incentives. The result of more heavy discounting was that average ticket prices increased only 2-4 percent. Thus, there has yet to be a significant drop-off in passenger travel. Domestic passenger miles continued to grow during the month (albeit slowly); however, smaller load factors kept growth in aircraft miles flown on these routes in the 5-6 percent range.

Meanwhile, international travel continued to see robust growth despite higher fares. For the ninth time in ten months, international miles flown are believed to have seen double digit growth. This growth is somewhat surprising in light of weakening worldwide economic growth and a declining dollar. Against the British pound, for example, the dollar has fallen nearly 15 percent in five months. However, while a weak dollar hurts the purchasing power of U.S. travellers overseas, it makes it less expensive for foreign travelers coming here.

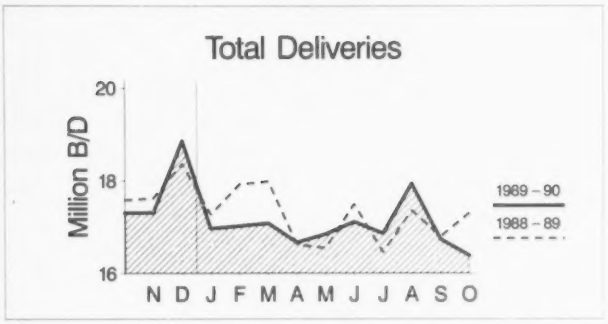
Domestic military deliveries are believed to have been up about 20 thousand b/d in October from pre-invasion levels due to larger draws on existing contracts. However, they likely fell from the high levels seen in September when supplemental contracts were used to restock inventories drawn down during the U.S. airlift to the Persian Gulf.

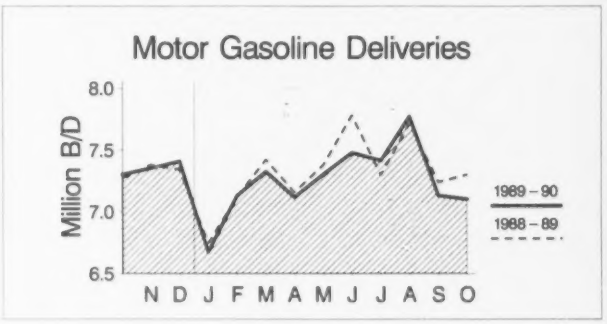
Growing airline travel, increased military demands, and the threat of war all served to bid up the price of jet fuel more rapidly than crude oil in late September and early October. However, after peaking in the second week of the month, spot jet fuel prices dropped by as much as 45 cents/gallon during the last two and a half weeks of October.

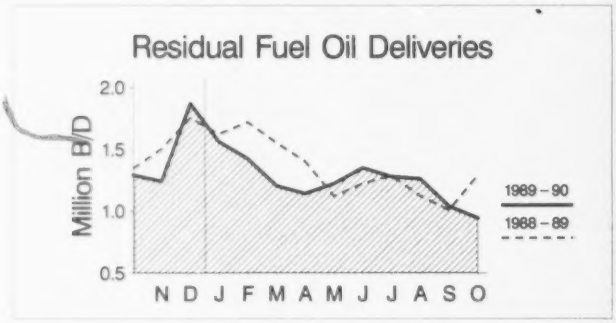
Other Oils

DOWN FOR SECOND MONTH IN A ROW.

Deliveries of other oils fell for the second month in a row, dropping 6.1 percent. Though deliveries had been increasing at a roughly 2 to 3 percent rate from April through August, the first quarter's largely weather-related decline of 6.3 percent, combined with the declines of the past two months, have left year-to-date deliveries down 1.5 percent versus a year ago.







SUPPLY [1/]

Production

ALASKAN GAIN MODERATES U.S. DECLINE.

Domestic crude oil production, which had been declining at a rate of about 6 percent or 450 thousand B/D earlier in the year, declined only about 3 percent or 220 thousand B/D in October. This was partly the result of a boost in Alaskan production as the summer's program of maintenance and enhancement of gas and water handling facilities on the North Slope was completed and as an accelerated well fracturing program continued.

Alaskan production, at nearly 1.9 million B/D, was up about 270 thousand B/D from June's low and was at the highest level since last December. Year to year, Alaskan crude oil output, compared with a decline trend of 90-100 thousand B/D earlier in the year, actually rose slightly—by 0.6 percent or about 10 thousand B/D. Production enhancements are estimated to have added 50-100 thousand B/D to October's figure.

Production in the lower 48 declined 4.1 percent or about 230 thousand B/D year to year, compared with declines earlier this year running at around 6 percent or 350 thousand B/D. It is as yet unclear how much of this estimated lesser decline represents a departure from the earlier trend in response to higher crude oil prices and how much is due to the inherent variability of the data. However, signs of increased drilling and well maintenance activity have become apparent in the past several months.

Imports

DOWN NEARLY 18 PERCENT.

Imports fell to 6.8 million B/D in October, down nearly 18 percent from a year ago and the lowest level in more than three years. Crude imports were down to 5.2 million B/D, more than 900 thousand B/D below a year ago as refiners continued to draw on domestic inventories.

Government deliveries of crude from the recent test sale of the Strategic Petroleum Reserve began in the latter part of October, though the bulk of deliveries are scheduled for November. Approximately 8 thousand B/D of SPR crude was delivered during October, with approximately 125 thousand B/D scheduled for November. It should be noted that API data, to better reflect day-to-day commercial activity, do not include imports for the SPR or stocks held in the SPR. Any deliveries of crude out of the SPR are included in the accompanying petroleum balance under "other supply".

October's product imports were down by nearly 560 thousand B/D, year to year, to 1.6 million B/D. All major products shared in the decline. Finished gasoline dropped to about 215 thousand B/D from about 390 thousand B/D a year ago. Reflecting weak deliveries, residual fuel oil imports dropped to 333 thousand B/D, off more than 40 percent from last October. Distillate imports declined less sharply, averaging about 215 thousand B/D for the month versus a little over 260 thousand B/D a year ago.

Recently-released data for August confirm that although product exports rose from prior levels in response to higher product prices outside the U.S., the increases were minor compared with the size of the domestic market. Gasoline exports, which have typically ranged from 30 to 60 thousand B/D over the past year or so, rose from about 40 thousand B/D in July to 77 thousand B/D in August—an increase amounting to about half a percent of the 7.8 million B/D supplied to the domestic market. The increment in exports went mainly to Mexico.

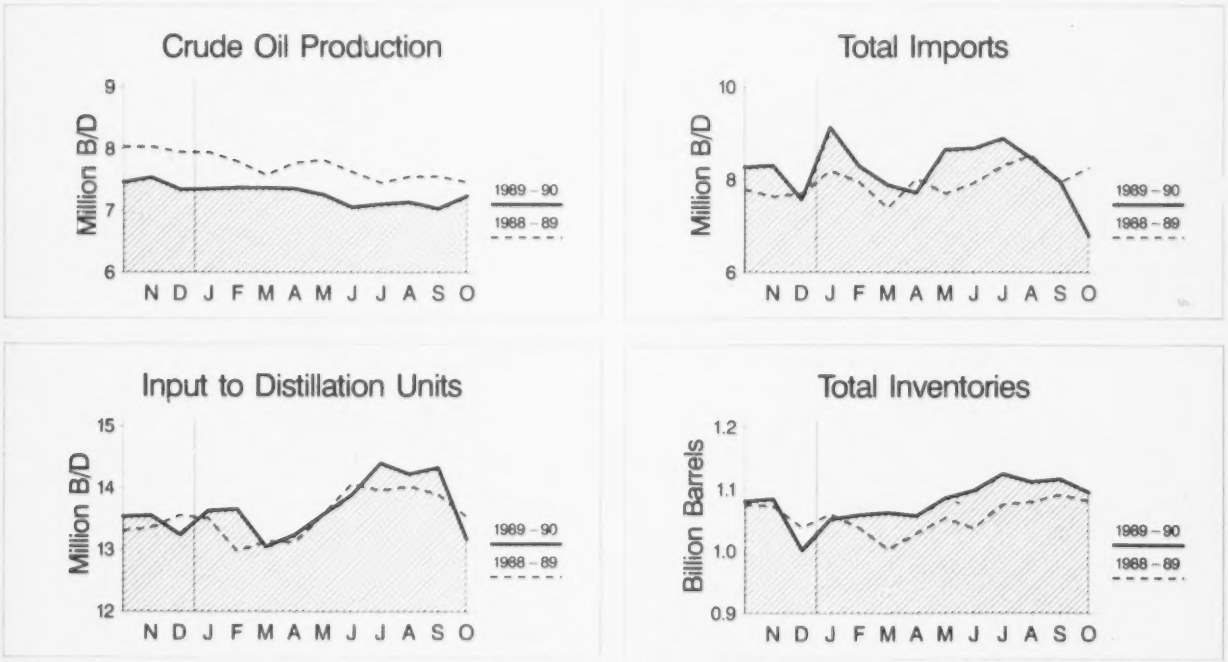
Refinery Operations

ACTIVITY PARALLELS DROP IN DELIVERIES. Input to distillation units, which had averaged 14.3 million B/D over July through September, or over 2.5 percent ahead of a year ago, declined to 13.2 million B/D in October. Though this was partly a reflection of typical seasonal patterns, the 2.7 percent year-to-year decline also reflected the month's weaker deliveries. Refinery activity typically drops in the fall in order to allow for turnarounds and maintenance between the periods of peak gasoline consumption during the summer and peak heating fuel needs during the winter. Utilization of reported capacity dropped to 84.5 percent from 86.1 percent a year ago, while utilization of capacity in actual operation is estimated to have been about 88 percent.

However, output of most major products rose except residual fuel. Kerosine jet fuel production, in particular, jumped 10.4 percent versus a year ago to over 1.4 million B/D, the largest amount ever produced in one month. Gasoline production rose 0.6 percent, and distillate output about 0.2 percent. Output of residual fuel oil, however, dropped nearly 21 percent.

Inventories

DISTILLATE STOCKS ABOVE AVERAGE. Declines for both crude and products brought the drop in total stocks to 24 million barrels during October. This was substantially more than the recent-year average decline of about 5 million barrels. Crude oil inventories, which dropped a further 9 million barrels during the month, have fallen 36 million barrels, or almost 10 percent since the end of July. At month-end they stood at about 344 million barrels, 6 million barrels above the 338-million-barrel average level of the previous five Octobers. Gasoline stocks declined 4 million barrels, about half their typical decline for October, to a level slightly above the previous-year average. Distillate stocks rose 4 million barrels to 138 million barrels—9 million barrels above the recent-year average.



1/ Total supply, i.e., production plus imports adjusted for net stock change is equal to total products supplied from primary storage. Total products supplied from primary storage less exports is equal to total domestic products supplied. Information contained in this report is derived from information published in the API Weekly Bulletin and is based on historical analysis of the industry. All data reflect the most current information available to the API and include all previously published revisions.

2/ Includes lease condensate.

3/ API data do not include crude oil imported for the Strategic Petroleum Reserve (SPR) nor crude oil stocks held in the SPR (according to the U.S. Department of Energy, the SPR held approximately 589 million barrels as of October 31, 1990).

ESTIMATED UNITED STATES PETROLEUM BALANCE
(Daily Average in Thousands of 42 Gallon barrels)

Products Supplied/Supply From Primary Storage	OCTOBER			YEAR-TO-DATE		
	1990[1]	1989[2]	% Change	1990[3R]	1989[2]	% Change
Products Supplied:						
Total motor gasoline	7,103	7,302	(2.7)	7,246	7,317	(1.0)
Finished leaded motor gasoline/*	358	659	(45.7)	409	878	(53.4)
Finished unleaded motor gasoline/*	6,745	6,643	1.5	6,837	6,439	6.2
Naphtha-jet	166	221	(24.9)	180	207	(13.0)
Kerosine-jet	1,371	1,252	9.5	1,305	1,253	4.2
Distillate fuel oil	2,954	3,127	(5.5)	3,038	3,064	(0.8)
Residual fuel oil	1,002	1,292	(22.4)	1,248	1,332	(6.3)
All other oils[4]	4,048	4,311	(6.1)	4,081	4,142	(1.5)
Reclassified[5]	-185	-201	(8.0)	-128	-145	(11.7)
Total domestic products supplied	16,459	17,304	(-4.9)	16,970	17,170	(1.2)
Exports	773	791	(2.3)	773	826	(6.4)
Total products supplied	17,232	18,095	(4.8)	17,743	17,996	(1.4)
Supply:						
Domestic production:						
Crude oil[6]	7,233	7,453	(3.0)	7,223	7,649	(5.6)
Natural gas liquids	1,472	1,478	(0.4)	1,498	1,572	(4.7)
Other supply[7]	975	558	74.7	1,072	893	20.0
Total domestic supply	9,680	9,489	2.0	9,793	10,114	(3.2)
Imports:						
Crude oil, total[8]	5,230	6,149	(14.9)	6,100	5,788	5.4
Canadian	645	590	9.3	642	636	0.9
Other	4,585	5,559	(17.5)	5,458	5,152	5.9
Products, total	1,557	2,115	(26.4)	2,147	2,232	(3.8)
Residual fuel oil	333	583	(42.9)	516	632	(18.4)
Other	1,224	1,532	(20.1)	1,631	1,600	1.9
Total imports	6,787	8,264	(17.9)	8,247	8,020	2.8
Total supply	16,467	17,753	(7.2)	18,040	18,134	(0.5)
Stock change, all oils	-765	-342	*****	297	138	*****
Refinery Operations						
Input to crude oil distillation units	13,170	13,533	(2.7)	13,714	13,582	1.0
Operable capacity	15,591	15,722	(0.8)	15,533	15,692	(1.0)
Refinery utilization (%)[9]	84.5	86.1	(1.9)	88.3	86.6	2.0
Crude oil runs	12,941	13,360	(3.1)	13,544	13,423	0.9

Stocks (millions bbls.)	1990		1989[2]	% Change from	
	Oct. 31[/10]	Sep. 30[/10]	Oct. 31	Previous Month	Year Ago
Crude oil[8]	343.8	352.4R	336.0	(2.4)	2.3
Unfinished oils	106.7	112.1	112.3	(4.8)	(5.0)
Total motor gasoline/**	221.1	224.7	222.5	(1.6)	(0.6)
Finished leaded motor gasoline/*	10.5	11.0	18.8	(4.5)	(44.1)
Finished unleaded motor gasoline/*	171.5	172.9	163.8	(0.8)	4.7
Naphtha-jet	6.5	6.1	6.3	6.6	3.2
Kerosine-jet	45.1	42.6	43.9	5.9	2.7
Distillate fuel oil	138.2	134.2	121.7	3.0	13.6
Residual fuel oil	49.7	51.1	50.9	(2.7)	(2.4)
All other oils	180.8	192.4R	186.1	(-6.0)	(2.8)
Total all oils	1,091.9	1,115.6R	1,079.7	(-2.1)	1.2

/1 Based on API estimated data converted to a monthly basis.
/2 Source: U.S. Department of Energy.
/3 Jan.-Aug.,DOE, Sept.-Oct., API.
/4 Includes crude losses.
/5 Beginning with January 1981, U.S. Department of Energy began using a new data collection system which encompasses a method to ascertain the amount of product reclassified during the production phase. So that there will be no double counting of these volumes, they are subtracted from the total domestic products supplied.
/6 API estimate; includes lease condensate.
/7 Includes Unaccounted-for crude oil, Processing gain and Field Production of other hydrocarbons and alcohol.
/8 Data do not include oil imported for the Strategic Petroleum Reserve (SPR) nor crude oil stocks held in the SPR.
/9 Represents "Input to crude oil distillation units" as a percent of "Operable capacity".
/10 Derived by interpolating API weekly stocks data.
/R Revised.
/* Included in motor gasoline.
/** Includes finished leaded, finished unleaded, and motor gasoline blending components stocks.

DISTILLATE SUPPLY CAPABILITY

This article reviews supply capability for distillate fuel oil with respect to this heating season, given adequate supplies of crude oil. It concludes that, barring unforeseen disruptions, available supplies from refineries, primary inventories, and imports appear adequate to meet demand within ranges likely to be observed.

As demonstrated by last December's extraordinarily cold weather—very unlikely to recur this year—this is not an empty caveat. Though the refining and distribution system was taxed, the resulting exceptional surge in demand was supplied through the extraordinary efforts of participants in all parts of the industry.

Deliveries

Residential and commercial use accounts for about a quarter of distillate fuel oil deliveries, on an annual basis—but is the main reason for the seasonal variation in distillate deliveries, which have averaged half a million B/D higher in the October-March period than in the other six months of the year. Other uses include consumption by highway vehicles and by other modes of transportation, as well as industrial, farm, off-highway, and electric utility uses.

Deliveries for the first ten months of this year have averaged a decline of about 1 percent, or if adjusted for warm winter weather early in the year, have risen only slightly. These figures include the unusually strong deliveries of August and September, as well as October's unusually large drop—which we believe were more the result of changes in stocks held by distributors than of large fluctuations in actual consumption. As for the current heating season, API does not forecast demand, but the Department of Energy's recent Short-Term Energy Outlook (September issue) provides a representative range of projections.

The Energy Information Administration's projections range from 3.27 to 3.40 million B/D for the season, with a middle case of 3.34 million B/D. (The heating season here is defined as October through March.) We estimate that an extremely cold winter— specifically, one which would have only a 5 percent chance of occurring—would add about 90 thousand B/D to demand over the heating season. Obviously, over shorter periods, the effects of cold weather could be greater. Adding this to the range already mentioned yields figures for deliveries—in the event of a cold winter—running from 3.36 to 3.49 million B/D. Based on historical seasonal patterns, average deliveries for the remainder of this season—November through March—work out to nearly the same levels.

Refineries

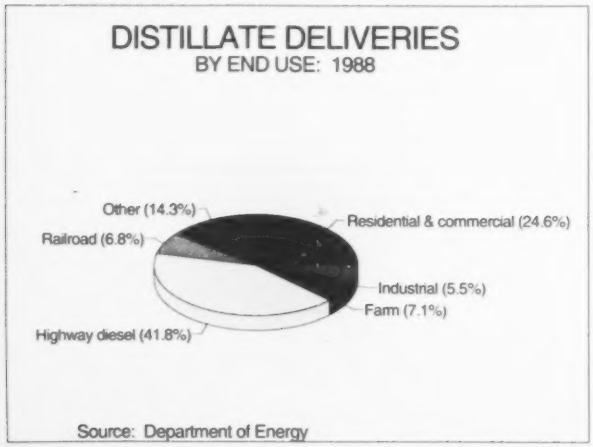
In recent years, current refinery production has supplied most of the fuel oil used during the heating season—88 percent, on average, over the past five seasons. Only about 4 percent has come from inventories, while the rest has been supplied from net imports. Refineries have already been turning out distillate at high rates over the past few months. Since May, U.S. refineries have been producing an average of 3.0 million B/D, about 4 percent above the year-ago period and among the highest levels for a similar period since the late 1970s.

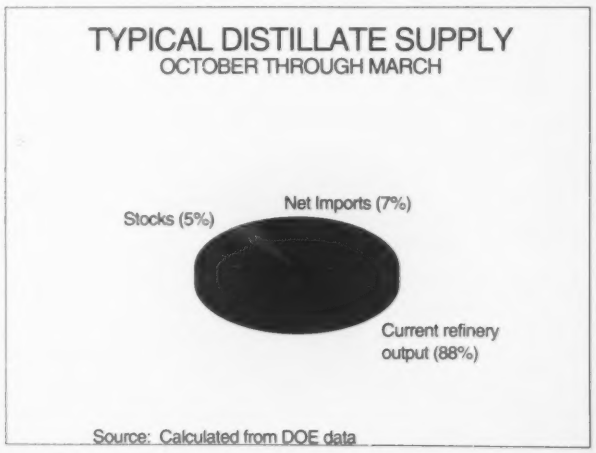
A conservative estimate of what refineries are able to produce can be derived from historical observation. For example, for the past five seasons, the highest distillate fuel oil yield for October through March (as calculated on input to distillation units) was 23.3 percent. Since this is calculated over a period which includes the lower-demand months, when yields are also typically lower, it is, in fact, reasonably conservative. Over the remainder of the season, refinery runs averaging 14.0 million B/D, though quite strong, would allow for necessary turnarounds and downtime for normal maintenance and repairs.

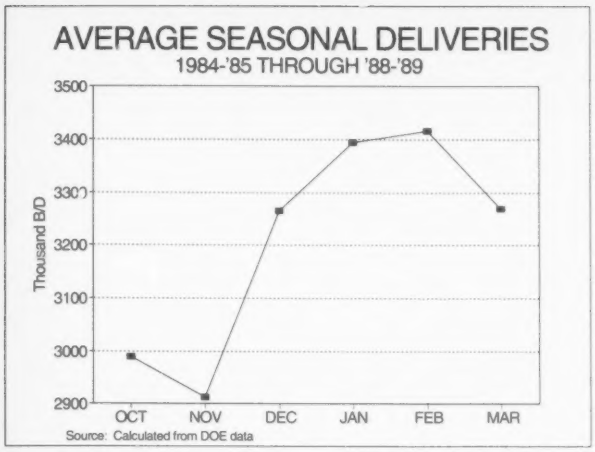
Based on these figures, supply capability from refineries is estimated at 3.26 million B/D. Higher levels of output could, at least in theory, be achieved, particularly for short periods. However, an extreme shift towards distillate over a prolonged period could significantly hinder the output of gasoline and other products.

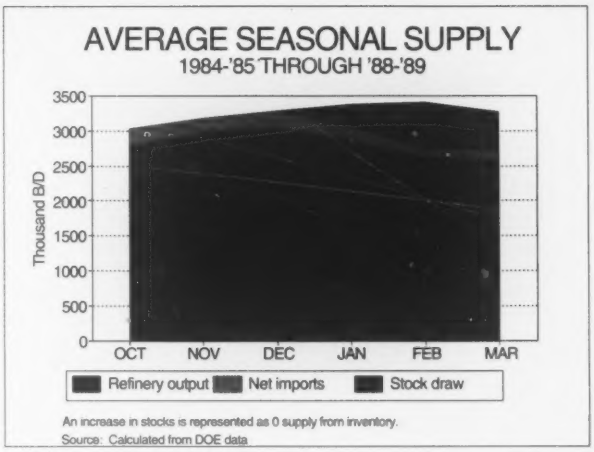
Inventories

Stocks of distillate at the primary level were about 138 million barrels at the end of October, about 9 million barrels above the average of the previous five Octobers. Even if stocks do not rise any further—and typically, they have often risen into November and sometimes December—this would allow for about 350 thousand B/D of supplies, averaged over the remain-









ing five months of the season. This is based on a drawdown to 85 million barrels, the estimated minimum operating level for primary distillate inventories.

Imports

Estimating an upper bound on "net import capability" is a difficult process, and not really necessary for this analysis. Net imports typically satisfy only a small portion of U.S. distillate demand, averaging less than 7 percent over the past five seasons. Even if net imports amount to no more than the 250 thousand B/D observed last season, this, combined with the estimated supply capability from refineries and inventories, would amount to a combined supply capability of over 3.8 million B/D—more than enough to meet deliveries even at the high end of the range discussed above.

There appears little reason for major concern about distillate imports at present, but the roles of the U.S., Iraq and Kuwait in world distillate markets still need to be considered. Although most U.S. demand is satisfied with domestically refined product, America is still one of the world's top distillate importers. In 1989, the U.S. was among the three largest in that category (along with Germany and France). The 304 thousand b/d of gross imports accounted for around 12 percent of total world distillate trade.

Most of the heating oil and diesel fuel that the U.S. imports has come from Western Hemisphere suppliers—primarily Venezuela, Canada and the Virgin Islands (which, although a U.S. territory, is classified as a "foreign" supplier in Department of Energy data). Little or none of these imports has come from Iraq and Kuwait.

Kuwaiti and Iraqi distillates, meanwhile, accounted for slightly less than 5 percent of world diesel and heating fuel exports last year (and only about 1 percent of world consumption). However, along with continued redirection of Saudi product (much of which has been diverted from export markets to satisfy the military needs of Operation Desert Shield), the potential loss could be as high as 2 percent of world distillate consumption and 10 percent of world exports. If the present standstill in the Persian Gulf erupts into war, military demands could become larger (and if military targets include refineries in Saudi Arabia, the disruption could be larger still). Based on analyses such as those of the Department of Energy, available world refining capacity would be capable of providing additional supplies, given adequate sources of crude oil.

Most distillate exports from Iraq, Kuwait and Saudi Arabia had been going to Japan, the Netherlands, Italy and France. This is arguably a moot point in a world market, since all importing countries must bid competitively for available products. The time and expense involved in shipping refined products overseas does, however, tend to soften the link between regional markets to some degree. The two-week voyage from the Americas across the Atlantic provides a buffer in the event of unexpected demand spikes in Europe and likewise partially cushions overseas markets from developments in the U.S. and Canada. Still, prolonged high demand in other importing nations during the winter months could mean more intense competition for sources of world supplies (including supplies from Venezuela, Canada, and the Virgin Islands) and higher demand on world refining capacity.

Conclusion

These calculations must be qualified by the fact that, with the complexity and breadth of the domestic petroleum refining and distribution system, temporary disruptions are always possible. Unexpected disruptions involving refineries, pipelines, or waterways could potentially cause problems on a local or broader scale. Last winter, for example, the Northeast experienced the coldest December on record, while some refineries suffered technical problems resulting from the extreme weather as well as other unanticipated difficulties. Inland water transportation was hindered by ice and low water levels.

Yet, through the extraordinary efforts of refiners, distributors, and heating oil dealers, heating oil customers were supplied. Refinery production surged, inventories were drawn upon at substantial rates, and, in January, distillate imports reached a new monthly record. December's cold was an exceptionally rare occurrence—in fact, according to the National Weather Service, no December has been as cold in the Northeast since record- keeping began in 1895. The likelihood of a recurrence this season is thus quite small.

In sum, given adequate supplies of crude oil and barring unforeseen disruptions, supplies from domestic refineries, inventories, and imports appear adequate to meet demand within ranges likely to be observed, even should the winter be unusually cold. The potential, however, for unanticipated problems in the domestic supply system can never be entirely dismissed from the analysis.

A25775-2

American Petroleum Institute
1220 L Street, Northwest
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Monthly Statistical Report

Prepared by the Finance, Accounting, and Statistics Department

Vol. 14, No.11

DECEMBER 19, 1990

NOVEMBER 1990

SUMMARY

Total deliveries' decline moderated in November from October's large, roughly 5 percent drop. However, deliveries still fell 2.6 percent for the month in response to the higher prices of recent months and a weakening economy. Deliveries of most major products continued to fall except for those of kerosine jet fuel, which reached record levels for this time of year.

Refinery activity paralleled demand patterns, with output of most products declining. Production of kerosine jet fuel, however, continued at record rates, rising 7 percent over last November.

Gasoline deliveries fell 3.2 percent, continuing the declines of recent prior months; distillate fuel oil deliveries, though stronger than might have been anticipated on the basis of the month's warmer weather, still declined 3.5 percent; deliveries of residual fuel oil fell nearly 22 percent to levels among the lowest in decades. Kerosine jet fuel deliveries, however, rose 4.5 percent, bringing their average year-to-year increase over the past four months to nearly 5 percent—contrasting with the roughly 1.5 percent decline for deliveries of all other products combined.

Imports fell, year to year, for the fourth month in a row—more so than not a reflection of the continued drawdown of domestic inventories. November's decline in imports amounted to 1.4 million B/D or nearly 17 percent, with both crude and products sharing in the decline.

With Alaskan production hampered by stormy weather at Valdez, domestic crude oil production fell roughly 450 thousand B/D or 6 percent for the month. Severe wind storms interfered with tanker loading, leading to closing of the Valdez port and substantially reduced pipeline flow on several brief occasions during the month. As a result, Alaskan production fell roughly 150 thousand B/D from the prior month's level and was down about 180 thousand B/D versus a year ago.

Total inventories dropped 27 million barrels during the month, bringing the drawdown since the end of July to about 65 million barrels. Distillate stocks declined 5 million barrels during the month but remained well above the levels of last November.

PRODUCT SUPPLIED [1]

Gasoline

DELIVERIES CONTINUE TO DROP. Retail gasoline prices, after rising about 30 cents per gallon between early summer and October, remained steady in November and even declined slightly towards the end of the month. The increase over the prior months was a partial reflection of volatile world crude oil prices which, through early November, had risen on net about $20 per barrel or more than 45 cents per gallon. By month-end, crude oil prices had fallen about $6 per barrel but were still over $13 (32 cents per gallon) above mid-June levels.

The impact of higher prices, however, continued to be evident. Deliveries in November continued to show larger declines year to year, falling 3.2 percent and suggesting that the 5 cent per gallon increase in the Federal excise tax—effective December 1—may not have spurred a noticeable amount of advance purchases before the new 14.1 cent per gallon Federal rate went into effect. Furthermore, travel data continue to show a slowing in vehicle traffic. Through July, the year-to-year growth in miles traveled had averaged about 3 percent. Data for September show only about a 1 percent increase, and there are indications that October may have declined.

Consumer response to higher prices of the past several months has also been evident in substantial grade switching away from premium unleaded, which nationally has averaged about 18 cents higher than midgrade. Department of Energy data for September show a year-to-year drop in sales of premium amounting to 27 percent. With premium's share falling from 22 percent to 17 percent between July and September, and likely more since then, downward shifts among the octane choices resulted in a net gain for unleaded regular, whose share rose to 69 percent from 63 percent over the same two-month period. Midgrade unleaded's share remained at about 10 percent, and that of regular leaded amounted to only 4-5 percent.

	API ESTIMATES NOVEMBER		YEAR-TO-DATE	
	Million B/D	Percent Change	Million B/D	Percent Change
Total domestic deliveries	16.9	(2.6)	16.9	(1.5)
Crude production[2]	7.1	(6.0)	7.2	(5.6)
Total imports[3]	6.9	(16.8)	8.1	0.3
Stocks (million bbl)[3]	1,060	(2.2)	na	na

Distillates

WARM WEATHER'S EFFECT NOT FULLY APPARENT.

Distillate deliveries, after falling in October by more than any likely decline in actual consumption, dropped 3.5 percent in November. With weather for the month 17 percent warmer than a year ago, the year-to-year decline was smaller than might have been expected. In fact, adjusted for weather, we estimate that deliveries for the month would have increased a little less than 1 percent. Although it is possible that this strength was the result of some buyers shifting purchases into November that otherwise might have occurred in December in order to avoid the 5-cent-per-gallon increase in Federal excise tax, this would be inconsistent with the apparent lack of such an effect on gasoline deliveries. With retail prices drifting downwards during the month, many purchasers may have concluded that there was little to gain from altering their purchase patterns.

Nevertheless, despite November's less-than-anticipated decline, the trend over the past several months has been downwards. Averaged over the past three months, distillate deliveries, adjusted for weather, would have declined about 1.5 percent.

Residual Fuel Oil

DELIVERIES STILL DOWN SUBSTANTIALLY.

Residual fuel deliveries fell 21.8 percent in November, a rate of decline close to the 17 percent seen on average during September and October. At 970 thousand B/D, deliveries remained below the million B/D mark for the third consecutive month and, as such, were among the lowest for any month in decades. Resid sales, more so than other petroleum products, have fallen in recent months. A significant part of resid's decline is attributable to higher prices and milder weather versus a year ago which have led utilities to switch to natural gas. These switches come on top of losses to nuclear power in New England and Mid-Atlantic states. Bunker markets also have been weak since August due to sharply lower petroleum imports and weakening foreign trade.

Continued mild weather in the East kept electricity demand flat in November. Heating degree days were off by more than 15 percent in high-resid-use states in New England and the Mid-Atlantic. The temperate weather and slack electricity growth are believed to have reduced resid demand by freeing up more economical supplies of natural gas ordinarily going to serve heating needs this time of year.

For electricity generation, resid and nuclear are not substitutes in the same sense as resid and natural gas. Nonetheless, increases in generation with one do come at the expense of the other in regions where both steam and nuclear capacities exist. As a result of significant additions to (and restoration of) nuclear capacity in the East over the past 15 months, there have been substantial drops in resid-fired generation there. While utility-specific data are not yet available for recent months, data from June show that for the three utilities in Pennsylvania, New Hampshire and Virginia with significant changes in nuclear status over the previous 12 months, consumption of petroleum fell by over 31 thousand B/D year-over-year. Net generation by these three companies increased by over 25 percent over that same period.

With burgeoning ocean-borne oil imports early this year, growth in bunker fuel demand had been strong prior to the invasion. However, declining petroleum imports (down nearly 2 million B/D since July) have tempered that growth. Weakness in bunker and utility markets (together accounting for about three-quarters of the resid market) comes on top of demand weakness elsewhere. These same two sectors, according to recently-released Energy Department data, had been responsible for resid's overall growth last year. Sales to other major sectors (commercial, industrial, oil company, military, and "all other") all saw declines.

Kerosine Jet Fuel

OTHER PRODUCTS DECLINE, BUT JET STAYS STRONG.

Jet fuel deliveries grew 4.5 percent in November, about the same rate they had grown on average since the August 2 Iraqi invasion of Kuwait. At nearly 1.4 million barrels/day, deliveries were the highest ever for any November and approached a record high for any month (second only to last December when jet fuel was blended with distillate for use as heating fuel). Growth in commercial airline travel contributed to the November deliveries growth as unprecedented flight discounts and incentives spurred travel demand. The deliveries increase came despite year-over-year declines in stateside military demand, estimated to be down about 10 thousand B/D (although up by a comparable amount against low levels in June and July of this year). The troop buildup in Saudi Arabia has left fewer planes at home, and thus, is believed to have translated into lower military jet fuel demand here.

Despite higher jet fuel prices, many airlines cut fares on already discounted travel and offered "free companion" tickets on restricted travel. The impact of these incentives, whose intent was to fill otherwise empty seats, provided a boost to passenger travel but likely had a smaller impact on aircraft miles flown. Full fare prices are estimated to be up 15-20 percent since July, but with the proliferation of discounts, average fares are up only about 6-8 percent. In assessing what happened to underlying fuel consumption, the impacts of higher overall fares, improved load factors, and a sluggish economy likely balanced the impact of heavy discounting. We estimate aircraft miles flown to have maintained growth in the 4-5 percent range during November.

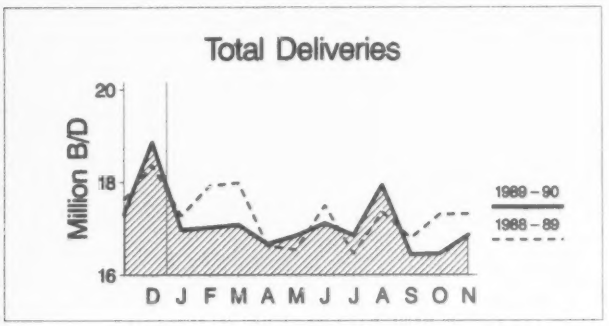
Spot jet fuel prices had risen sharply in the U.S. in September and early October (although the increases here were considerably lower than those in Europe and the Far East). However, by the end of November, increased jet fuel production and softer military demand brought jet fuel prices more in line with those of heating fuel.

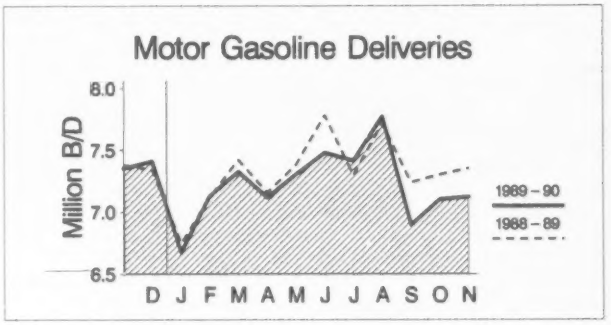
Other Oils

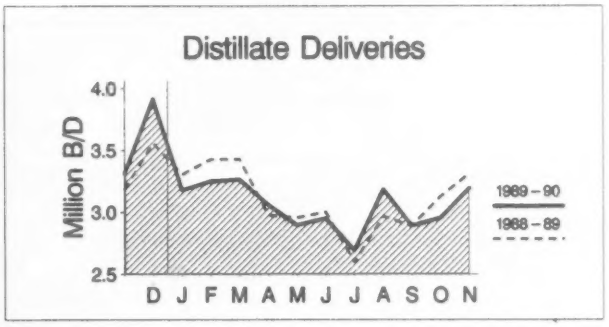
DELIVERIES NOT AS WEAK AS FOR TOTAL PRODUCTS.

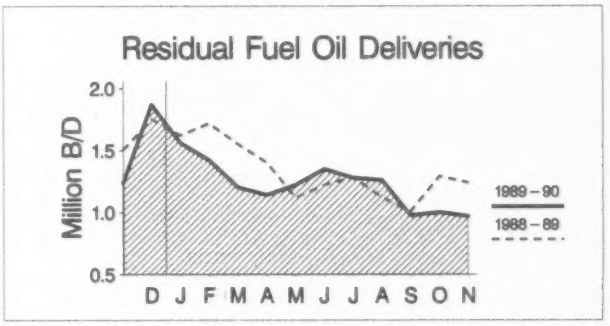
Deliveries of "other oils", reversing the declines of the past several months, rose 2.6 percent in November. Though, for the prior two years, deliveries in this category had been lagging behind the growth in total product deliveries, this has not been the case for much of this year. In 1988 and 1989, total deliveries had grown 3.7 percent and 0.2 percent, respectively, while growth in deliveries of "other oils" lagged behind by 1 to 1.5 percentage points.

Leaving aside the first quarter of this year, when extremely mild weather dampened heating demand for propane, deliveries of "other oils" have shown more strength than deliveries of petroleum products over all. Deliveries of "other oils" grew slightly faster than total deliveries in the second quarter, and since August, have risen an average of about 1.5 percent—contrasting with a decline of the same magnitude for total deliveries.









SUPPLY [1/]

Production

BAD WEATHER HAMPERS SHIPMENTS FROM NORTH SLOPE. Several episodes of stormy weather at the Port of Valdez hampered loadings and thus slowed North Slope production in November. For several days early in the month, winds of up to 125 miles per hour hampered tanker traffic and led the Coast Guard to close the port of Valdez at times. The result was a reduction in pipeline flow to as little as 700 thousand B/D for brief periods. Another bout of high winds late in the month had a similar effect. The result was a 150 thousand B/D drop in Alaskan production from October's recent-month high. Because of recent production enhancements, the year-to-year decline under more normal conditions would have been much less than the 180 thousand B/D observed.

In the lower 48, production declined 275 thousand B/D or 4.9 percent, year to year. Without the weather-related disruption in Alaska, the decline for the U.S. as a whole would have been 4 percent, about a third less than earlier in the year. However, actual data for November show a drop of 454 thousand B/D or 6.0 percent.

Imports

YEAR-TO-YEAR DECLINE CONTINUES. November's imports fell, year to year, for the fourth month in a row. The 16.8 percent decline, when combined with those of the prior three months, put the average year-to-year drop since August at nearly 900 thousand B/D. Two thirds of that decline reflected a significant draw on domestic inventories over the past four months versus a smaller build during the same period last year.

Withdrawals from the Strategic Petroleum Reserve added about 110 thousand B/D, or less than 1 percent of refineries' crude runs for the month, to crude oil supplies during November. The roughly 4 million barrels in sales from the test ordered by President Bush in late September were nearly complete by month-end. The 26 shipments from the SPR since October amounted to a small fraction of the roughly 590 million barrels that have been accumulated over the past thirteen years at a rate of anywhere from 16 to 93 million barrels per year. In recent years, the SPR build has typically been 20 to 25 million barrels annually. (SPR withdrawals are reflected in the accompanying petroleum balance under "other supply". Imports for storage in the SPR are not included in API import data, which reflect commercial imports only.)

With weaker demand and adequate domestic supplies, product imports continued to be down year to year in November. Overall, product imports fell 14.7 percent or about 320 thousand B/D. Imports of finished gasoline dropped 121 thousand B/D to 285 thousand B/D, distillate imports fell 68 thousand B/D to about 239 thousand B/D, and residual fuel oil imports were down nearly 200 thousand B/D to 349 thousand B/D.

Though declining demand contributed to the drop in imports of most major products, this was not the case for kerosine jet fuel. November's kerosine jet fuel imports averaged 47 thousand

B/D for the month, down from 89 thousand B/D a year ago, despite deliveries which have continued to be strong in recent months. Rather, imports of this product have been dampened by strong demand outside the U.S., particularly from the military build-up in the Middle East. European spot prices in recent months have been averaging 10 to 15 cents per gallon higher than in New York, and the premium has been even greater in the Far East. With foreign prices continuing substantially higher than in the U.S., greater reliance has been placed on supplies from domestic refineries.

Refinery Operations

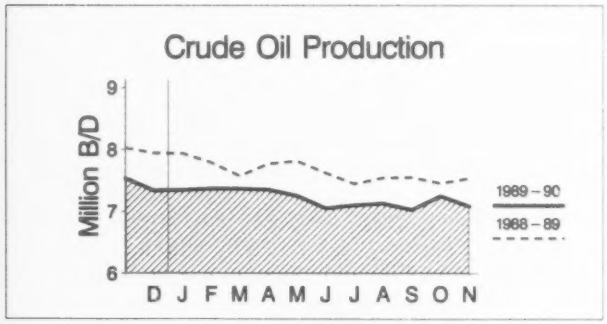
PRODUCT OUTPUT PARALLELS DEMAND. The drop-off in deliveries continued to be reflected in refinery activity in November, with input to distillation units falling by 3.3 percent, year to year. November's input was similar to October's lower level, which had followed strong activity during the July through September period. Product-by-product output paralleled demand patterns for the individual products. Gasoline output was off 2.1 percent, and distillate fuel oil, 5.1 percent; residual fuel oil output fell nearly 20 percent. Kerosine jet fuel production, however, was up 7.0 percent. Continuing at about 1.4 million B/D, output of kerosine jet fuel over the past two months has been at the highest monthly levels ever.

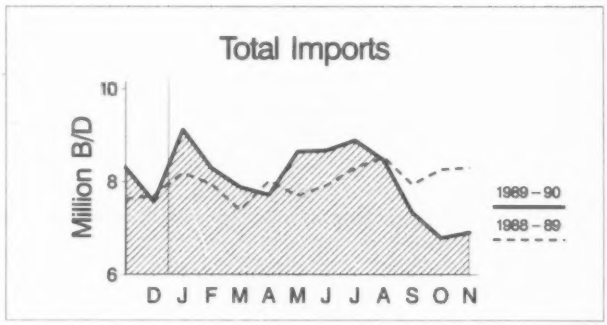
Utilization of reported capacity averaged 84 percent, down 2 percentage points from last November's rate. Capacity in actual operation was utilized at an estimated 87 percent rate, down from near-maximum rates during July through September of 95 to 96 percent.

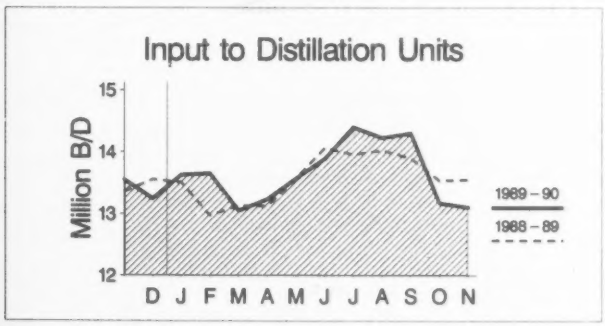
Inventories

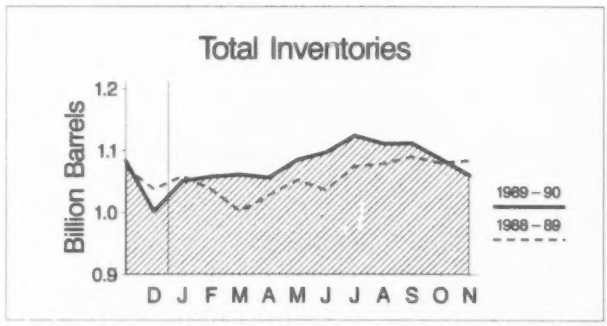
STOCK DRAW CONTINUES. Total inventories continued their downtrend of the last several months. November's drop contributed another 27 million barrels to the decline which has amounted to nearly 65 million barrels, or an average of about 500 thousand B/D, since the end of July. The historical average stock change over that period has been an increase, rather than a decline, of about 200 thousand B/D. Total stocks fell to 1,060 million barrels, a little below the midpoint of the 1,030 to 1,100 million barrel range of recent previous Novembers.

Crude stocks declined 9 million barrels to 335 million barrels, compared with a historical range of about 320 to 365 million barrels. Though distillate stocks' 5 million barrel decline in November was not typical for the month, at 133 million barrels, inventories were still 13 million barrels higher than a year ago. Gasoline stocks were steady at 221 million barrels for the month, about average for November.









1/ Total supply, i.e., production plus imports adjusted for net stock change is equal to total products supplied from primary storage. Total products supplied from primary storage less exports is equal to total domestic products supplied. Information contained in this report is derived from information published in the API Weekly Bulletin and is based on historical analysis of the industry. All data reflect the most current information available to the API and include all previously published revisions.

2/ Includes lease condensate.

3/ API data do not include crude oil imported for the Strategic Petroleum Reserve (SPR) nor crude oil stocks held in the SPR (according to the U.S. Department of Energy, the SPR held approximately 587 million barrels as of November 30, 1990).

ESTIMATED UNITED STATES PETROLEUM BALANCE
(Daily Average in Thousands of 42 Gallon barrels)

Products Supplied/Supply From Primary Storage	NOVEMBER			YEAR-TO-DATE		
	1990[1]	1989[2]	% Change	1990[3R]	1989[2]	% Change
Products Supplied:						
Total motor gasoline	7,121	7,353	(3.2)	7,214	7,320	(1.4)
Finished leaded motor gasoline/*	316	597	(47.1)	399	853	(53.2)
Finished unleaded motor gasoline/*	6,805	6,756	0.7	6,815	6,467	5.4
Naphtha-jet	184	182	1.1	181	205	(11.7)
Kerosine-jet	1,397	1,337	4.5	1,307	1,261	3.6
Distillate fuel oil	3,194	3,311	(3.5)	3,045	3,086	(1.3)
Residual fuel oil	970	1,240	(21.8)	1,217	1,324	(8.1)
All other oils[4]	4,189	4,084	2.6	4,112	4,137	(0.6)
Reclassified[5]	-195	-196	(0.5)	-144	-150	(4.0)
Total domestic products supplied	16,860	17,311	(2.6)	16,932	17,183	(1.5)
Exports	848	975	(13.0)	789	839	(6.0)
Total products supplied	17,708	18,286	(3.2)	17,721	18,022	(1.7)
Supply:						
Domestic production:						
Crude oil[6]	7,082	7,536	(6.0)	7,212	7,639	(5.6)
Natural gas liquids	1,596	1,483	7.6	1,520	1,564	(2.8)
Other supply[7]	1,233	1,099	12.2	1,094	912	20.0
Total domestic supply	9,911	10,118	(2.0)	9,826	10,115	(2.9)
Imports:						
Crude oil, total[8]	5,056	6,131	(17.5)	5,972	5,819	2.6
Canadian	618	594	4.0	634	632	0.3
Other	4,438	5,537	(19.8)	5,338	5,187	2.9
Products, total	1,852	2,170	(14.7)	2,097	2,227	(5.8)
Residual fuel oil	349	543	(35.7)	498	624	(20.2)
Other	1,503	1,627	(7.6)	1,599	1,603	(0.2)
Total imports	6,908	8,301	(16.8)	8,069	8,046	0.3
Total supply	16,819	18,419	(8.7)	17,895	18,161	(1.5)
Stock change, all oils	-889	133	*****	174	139	*****
Refinery Operations						
Input to crude oil distillation units	13,101	13,549	(3.3)	13,656	13,579	0.6
Operable capacity	15,591	15,732	(0.9)	15,556	15,696	(0.9)
Refinery utilization (%)[9]	84.0	86.1	(2.4)	87.8	86.5	1.5
Crude oil runs	12,883	13,420	(4.0)	13,480	13,423	0.4

Stocks (millions bbls.)	1990		1989[2]	% Change from	
	Nov. 31[10]	Oct. 31[10]	Nov. 30	Previous Month	Year Ago
Crude oil[8]	335.1	343.8	351.0	(2.5)	(4.5)
Unfinished oils	108.4	107.5R	111.5	0.8	(2.8
Total motor gasoline/**	221.2	221.1	223.6	0.0	(1.1)
Finished leaded motor gasoline/*	9.7	10.5	18.8	(7.6)	(48.4)
Finished unleaded motor gasoline/*	171.7	171.5	166.3	0.1	3.2
Naphtha-jet	6.5	6.5	6.8	0.0	(4.4)
Kerosine-jet	45.5	45.1	44.4	0.9	2.5
Distillate fuel oil	132.9	138.2	119.8	(3.8)	10.9
Residual fuel oil	51.0	49.7	52.4	2.6	(2.7)
All other oils	159.0	174.4R	174.2	(8.8)	(8.7)
Total all oils	1,059.6	1,086.3R	1,083.7	(2.5)	(2.2)

/1 Based on API estimated data converted to a monthly basis.
/2 Source: U.S. Department of Energy.
/3 January-September, DOE, October-November, API
/4 Includes crude losses.
/5 Beginning with January 1981, U.S. Department of Energy began using a new data collection system which encompasses a method to ascertain the amount of product reclassified during the production phase. So that there will be no double counting of these volumes, they are subtracted from the total domestic products supplied.
/6 API estimate; includes lease condensate.
/7 Includes Unaccounted-for crude oil, Processing gain and Field Production of other hydrocarbons and alcohol.
/8 Data do not include oil imported for the Strategic Petroleum Reserve (SPR) nor crude oil stocks held in the SPR.
/9 Represents "Input to crude oil distillation units" as a percent of "Operable capacity".
/10 Derived by interpolating API weekly stocks data.
/R Revised.
/* Included in motor gasoline.
/** Includes finished leaded, finished unleaded, and motor gasoline blending components stocks.

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Monthly Statistical Report

Prepared by the Finance, Accounting, and Statistics Department

Vol. 14, No. 12

JANUARY 16, 1991

DECEMBER 1990

SUMMARY

In 1990, for the first time in seven years, petroleum deliveries declined. As a result, the year's imports, after rising more than 60 percent between 1985 and 1989, held roughly steady. Domestic crude oil production, however, though falling at a lesser rate than in 1989, reached its lowest level since 1961.

Higher crude and product prices following the Iraqi invasion on August 2, the slowing economy, and mild weather in both the first and fourth quarters—which depressed heating-related demand—all contributed to domestic petroleum deliveries' decrease. For the year as a whole, deliveries, which had already been nearly flat in 1989, declined 2.1 percent.

The decline trend in the latter part of the year, however, was steeper than at the year's outset. During the first seven months of the year, deliveries had dropped 1.4 percent, year to year—though without unusually warm winter weather early in the year, the drop would have been only an estimated 0.5 percent. By the fourth quarter, the decline in deliveries had accelerated to 5.4 percent—but closer to an estimated 2.5 percent if adjusted for weather. The decline for the year as a whole, adjusted for weather, would have been about 1 percent.

Crude oil production fell 389 thousand B/D, or 5.1 percent, to the lowest level since 1961—though the drop was less than the previous year's record decline of over one-half million B/D. Alaskan production, which had been trending downwards at about 100 thousand B/D per year, experienced an upturn in the fall as a result of efforts to boost production and delay the natural decline process on the North Slope. In October, before the weather and other problems curbed production late in the year, Alaskan production actually slightly exceeded its year-ago level. Production in the lower 48, which had dropped about 385 thousand B/D in 1989, fell a less-rapid, roughly 300 thousand B/D in 1990 as oil field activity increased throughout the year.

As a result of the fall in deliveries and the moderation in the decline of domestic production, 1990's imports, which had risen markedly in each of the previous four years, were roughly even with the prior year's level. But because deliveries declined, total imports as a percent of domestic deliveries rose slightly in 1990, to 46.9 percent. Imports' share of deliveries in the past two years has been second only to the all-time high of 47.7 percent reached in 1977.

Though imports dropped from 8.5 million B/D in the first seven months of the year to 7.3 million B/D in the remainder, most of this was a reflection of inventory behavior. Without the substantial build in inventories during the first part of the year and the more than 600 thousand B/D drawdown since the end of July, imports would have averaged 7.9 million B/D in both periods.

Overall refinery activity slackened towards the end of the year in response to weakening demand. But output of kerosine jet fuel in the fourth quarter rose nearly 12 percent over the year- ago period—reaching an all-time quarterly high of 1.4 million B/D.

PRODUCT SUPPLIED [1]

Energy

PETROLEUM'S SHARE CONTINUES TO SLIP. Slower economic growth, higher petroleum prices, and more moderate weather all contributed to growth in energy demand which was flat, and perhaps negative, in 1990. Growth for the year was the lowest since 1985 and compares with increases of about 1.3 percent in 1989 and of about 2.4 percent on average over the previous 6 years.

It is anticipated that real GNP declined at year's end, bringing economic growth for 1990 to less than one percent. Thus, energy consumption per dollar of GNP, a measure of energy efficiency, is estimated to have declined (i.e. improved) by about one percent. In recent years, declines in this ratio have resulted from a number of factors, including our increasing vehicle fleet fuel efficiency and the effects of a compositional shift in our economy away from heavy manufacturing. In 1990, it is believed that much of the decline in this ratio can be attributed to mild weather.

By fuel group and by end-use, results were mixed. Consumption of fossil fuels in general was weak, with coal and natural gas all but flat, and petroleum down about two percent.

API ESTIMATES

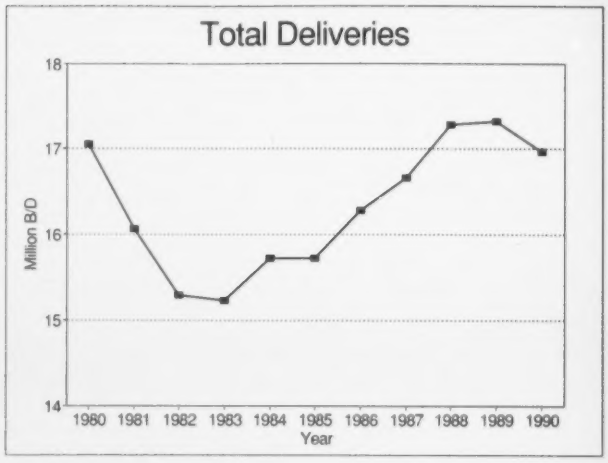
	DECEMBER		YEAR-TO-DATE	
	Million B/D	Percent Change	Million B/D	Percent Change
Total domestic deliveries	16.9	(10.6)	17.0	(2.1)
Crude production[2]	7.3	(0.7)	7.2	(5.1)
Total imports[3]	6.8	(9.5)	8.0	(0.6)
Stocks (million bbl)[3]	1,028	2.6	na	na

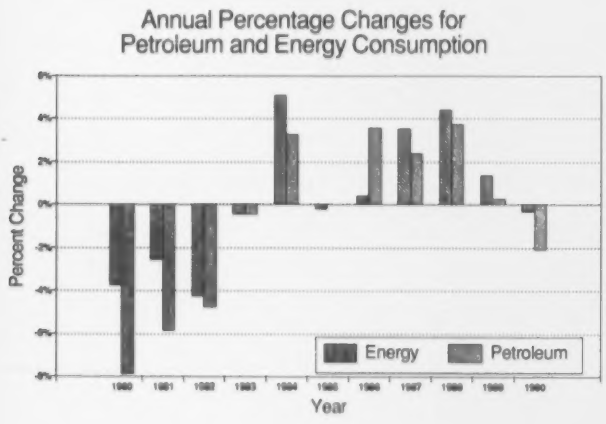
Note: For layout purposes, the graphs of monthly data which normally appear with the text have been moved to the end of this month's Report.

Nuclear power, on the other hand, thanks to new and restored generating capacity in the East and Southwest, grew by 10 percent for the year. Consumption declined in transportation, residential and commercial sectors, but rose moderately in the industrial sector.

Petroleum is still, far and away, the number one source of energy in the U.S., accounting for 41.4 percent of the estimated 81.1 quadrillion BTUs consumed. However, this share has declined in each of the past four years and in twelve of the past thirteen. It is down from 42.1 percent last year and from the peak of 48.7 percent in 1977. Natural gas and coal continue to be second and third with 23.8 and 23.3 percent, respectively. Nuclear climbed to about a 7.7 percent share and, for the first time, accounted for more than a fifth of our nation's electricity generation.

Estimates of energy consumption and GNP are based on the most current information available. While no significant adjustments are expected, past experience has shown that preliminary data are sometimes revised substantially.





Gasoline

DECREASE STEEPENS TOWARD YEAR-END. By year-end, retail gasoline prices, excluding taxes, had retraced roughly half their July-October increase. However, prices paid by consumers, which included the 5 cent increase in Federal excise tax effective December 1 as well as increases in some state taxes, were still significantly higher than levels in the first half of the year. This contributed, along with the slowing economy, to further weakness in gasoline deliveries in the latter part of 1990. Gasoline deliveries had already been showing a 0.9 percent year-to-year decline in the first seven months of 1990, but by the fourth quarter, deliveries were falling at about a 3 percent rate, year to year.

As a result, gasoline deliveries fell 1.7 percent for the year as a whole—the first significant annual decline in eight years. Deliveries had increased an average 2 to 3 percent per year from 1985 to 1988, and were down only marginally in 1989.

By October, retail gasoline prices had risen about 30 cents per gallon from pre-invasion levels—a partial reflection of the increase in worldwide crude oil prices, which equated to about 60 cents per gallon between mid-June, when an OPEC agreement to limit production was beginning to take shape, and early October. As additional crude became available from other producing countries in the months following the invasion, crude oil

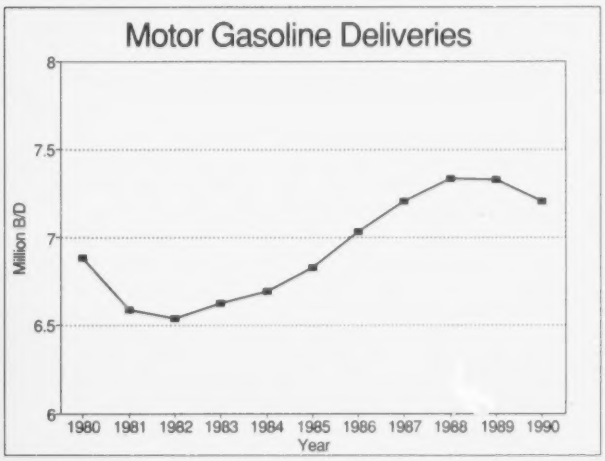
ESTIMATED ENERGY CONSUMPTION BY FUEL GROUP
(Quadrillion BTUs)

	Consumption		Growth	Market share	
Fuel	**1989**	**1990**	**1990**	**1989**	**1990**
Coal	18.9	18.9	0.0%	23.3%	23.3%
Natural Gas	19.4	19.4	0.0%	23.8%	23.9%
Petroleum	34.2	33.5	-2.1%	42.1%	41.4%
Nuclear	5.7	6.3	10.1%	7.0%	7.7%
Other	3.1	3.0	-2.5%	3.8%	3.7%
Total	81.3	81.1	-0.2%	100.0%	100.0%

prices trended downward for the remainder of the year.

Though the subsequent decline in crude oil prices was large, with little slack in world production capacity and with uncertainty about developments in the Mideast continuing, the drop was less rapid than the earlier increase. The net increase in crude oil costs from June to the end of the year still amounted to about 30 cents per gallon. Retail prices, excluding tax, ended the year about 15 cents higher than pre-invasion levels.

The effects of higher prices and a weakening economy were clearly evident in the dropoff in highway travel towards the end of the year. Year-to-year increases in miles traveled had been averaging about 3 percent during the first seven months of the year, but began to falter in the following months. By October, the most recently-available data show there was an 0.7 percent decline, and the fourth quarter as a whole most likely experienced a decline as well.



Distillates

WARM WEATHER CONTRIBUTES TO THE DECLINE. Distillate deliveries, similar to gasoline, declined in 1990 for the first time in eight years, falling 3.4 percent. However, because of opposing weather extremes in 1989 versus 1990, the annual decline was greater than it otherwise would have been.

Following December 1989's extreme cold—the coldest December on record for the Northeast—weather in the first quarter of 1990 averaged 17 percent warmer than normal nationwide. And despite unusual cold towards the end of December, particularly in the western part of the country, the fourth quarter as a whole also averaged 10 percent warmer than normal. If the effects of these weather extremes were to be discounted, we estimate that deliveries for the year as a whole would have been essentially flat.

As with most other major products, however, distillates' trend in the latter portion of the year differed significantly from that earlier in the year. For the first seven months, the data indicate a 1.8 percent year-to-year decline—though we estimate that, after adjusting for weather, deliveries then were actually rising marginally. But by the fourth quarter, price-induced conservation and the dampening effects of the weak economy on transportation diesel and other market sectors were beginning to become apparent. The fourth quarter's underlying decline rate was not nearly as large as the more than 10 percent drop indicated by the raw data—but still amounted to an estimated 3 percent on a weather-adjusted basis.

Residual Fuel Oil

ELECTRIC UTILITY USAGE FALLS. With moderate winter weather, higher resid prices vis-a-vis natural gas, and increasing nuclear electricity generation, residual fuel deliveries fell 10.6 percent in 1990. At 1,225 thousand B/D, deliveries were their second lowest in nearly fifty years. While resid supplied remained within the 1.2-1.4 million B/D interval more-or-less maintained since 1983, it dipped below the million barrel/day mark during two of the five months following the Iraqi invasion.

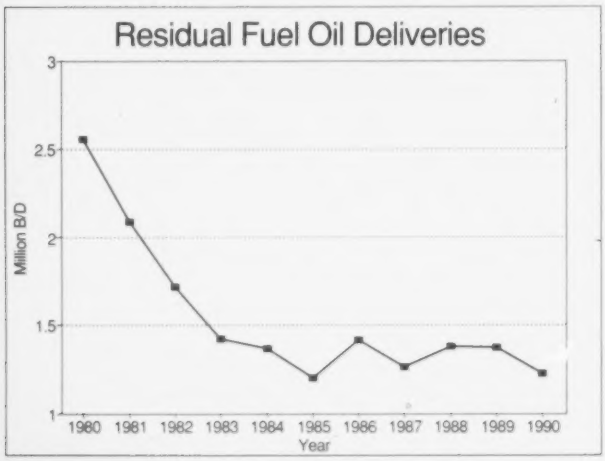
Deliveries of residual fuel oil, more so than of other petroleum products, declined following the Iraqi invasion. Already down 7 percent for the year at the time the crisis began, the rate of decline accelerated to 25 percent during the fourth quarter. Granted, part of this is reflective of the unusually high deliveries in December of 1989 which accompanied the severe cold. Still, adjusting for weather, we estimate that resid- supplied was down 15 percent in December, about the same as the average rate of decline during the previous three months.

Most of the decline in deliveries is believed to have come in the electric power sector, where consumption is estimated to have fallen by more than 20 percent for the year and more than 30 percent during the fourth quarter. Even accounting for the effects of weather, we estimate utility consumption would have fallen about 20 percent during the fourth quarter. The slide in utility demand, (a sector which accounts for nearly 45 percent of total resid), is attributable primarily to the following.

First, as has been mentioned, winter weather was moderate both early in the year and late in the year, keeping electricity demand growth at about 1.5 percent nationally while flat in the resid-intensive Northeast. Year-to-year, heating degree days fell more than 10 percent during the first half of the year and more than 20 percent during the second half. Second, new nuclear capacity in New Hampshire during the spring and additions to (and restoration of) nuclear capacity in Pennsylvania and Virginia during the middle of 1989 displaced significant amounts of resid- fired generation there. Third, resid prices increased relative to natural gas following the Iraqi invasion,

spurring fuel switching at utilities with such capability. This fuel switching was aided late in the year by mild winter weather, which freed up natural gas supplies not ordinarily available for use by utilities.

Resid's weakness was not limited to the utility sector, however. Declines in ocean-borne petroleum imports late in the year are believed to have slowed growth in resid bunker fuel demand from the double digit growth seen in 1989 and early 1990. While bunker prices in the U.S. remained competitive with prices overseas, this is not believed to have made major contributions to demand here.

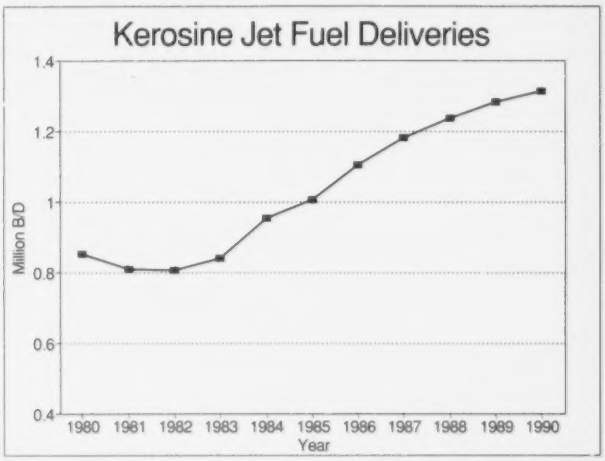


Kerosine Jet Fuel

CONTINUED GROWTH CONTRASTS WITH OTHER PRODUCTS. Deliveries of jet fuel declined 9.7 percent in December, but finished the year with the strongest growth of all major petroleum products, up 2.3 percent. The December decline is misleading in that it reflects record high deliveries last December when product was diverted for use in blending with heating and diesel fuels amid the record cold. Excepting that month a year ago, deliveries in November and December were the highest for any month ever. Adjusting for weather, we estimate that jet-fuel supplied was up nearly 3 percent in December, around 5 percent for the fourth quarter, and 3.6 percent for the year. However, deliveries data and actual consumption for kerosine jet fuel often diverge over short periods, and there is little reason to believe that consumption growth in the fourth quarter was any stronger than earlier in the year.

Strength in jet-fuel demand comes primarily from the commercial sector. Commercial miles flown, up 4 percent and 2 percent during the previous two years, increased by an estimated 5 percent for the year. The accelerated growth resulted not from above-trend increases in passenger travel, but from planes flown less full. Airlines added flights more quickly in 1990 than they added passengers, bringing load factors down, particularly on domestic routes. Load factors did improve slightly toward the end of the year in response to companion travel incentives offered by most major airlines.

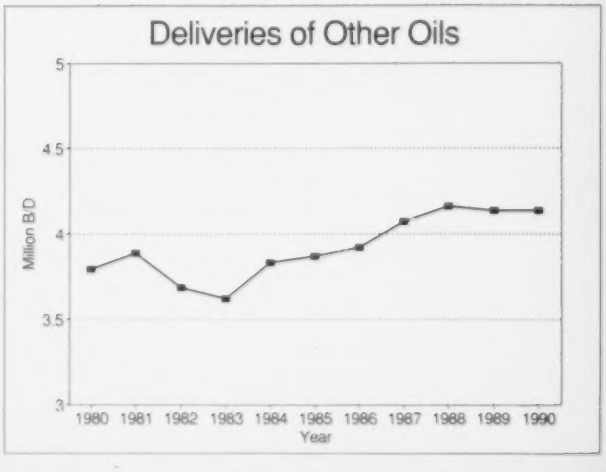
The surge in military demand for jet fuel, estimated as high as 200 thousand B/D worldwide in September versus July, has dropped in recent months to slightly more than 100 thousand B/D. However, most of that surge has been for delivery outside the United States, primarily in Europe. In December, stateside military deliveries are estimated to have increased by only about 10 thousand B/D from levels in July, and are believed to have actually declined from levels a year ago.

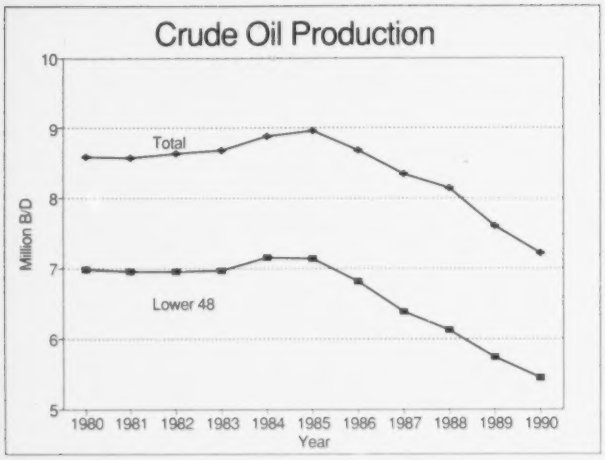


Other Oils

FLAT FOR THE YEAR. Deliveries of "other oils", following a slight decline in 1989, were flat for 1990 as a whole. Though fourth quarter deliveries, with an 0.6 percent rise, would seem to show greater strength than the 1.7 percent decline for the first seven months of the year, this is in part the result of a comparison against fourth quarter 1989 when deliveries of petrochemical feedstocks, particularly ethane, were unusually low.

Since the substantial rise in crude oil prices earlier in 1990, oil-based petrochemical feedstocks (particularly gasoil) have lost ground to lighter feedstocks. Deliveries of oil-based feedstocks dropped from about 550 thousand B/D in the second quarter to less than 400 thousand B/D in October (latest data available). Meanwhile, ethane deliveries jumped from about 470 thousand B/D to 625 thousand B/D over the same period.





SUPPLY [1]

Production

LOWEST CRUDE PRODUCTION IN NEARLY 30 YEARS.

Though falling less than the record 527 thousand B/D decline of 1989, domestic crude oil production still dropped for the fifth consecutive year in 1990. The year's crude oil production fell 389 thousand B/D or 5.1 percent to 7.2 million B/D, the lowest level since 1961. Since 1985, annual production has dropped 1.7 million B/D or about 20 percent.

Production in Alaska, though dropping by 96 thousand B/D for the year as a whole, was enhanced in the latter part of the year by the summer's gas and water-handling projects as well as the more-recent acceleration in well-fracturing on the North Slope. Since the beginning of its decline in 1989, Alaskan output's underlying downward trend had been running at about 100 thousand B/D per year.

But by October 1990, before the past two months' difficulties with stormy weather and tanker availability inhibited loadings, the efforts to enhance output and delay the natural decline process resulted in Alaskan production actually slightly exceeding year-ago output. The problems in November and December depressed production in Alaska by about 150 thousand B/D in November and 60 thousand B/D in December below October's nearly 1.9 million B/D.

In the lower 48, 1990 crude oil production fell 293 thousand B/D, or 5.1 percent, year to year, a moderation from the prior year's 385 thousand B/D drop. The decline reduced lower 48 output to a little over 5.4 million B/D for the year, a 24 percent drop since 1985 and the lowest annual level since 1950.

Abatement in the decline rate of the lower 48 corresponds with a moderate upturn in oil well completions evident since late 1989. For the first three quarters of 1990, oil completions were up about 15 percent year to year—though still running at only about a third the rate of 1985. Well servicing activity has also shown an upturn in recent months. Operations to maintain and enhance the productivity of existing wells were running about 10 percent ahead of a year ago in the last few months of 1990. Although quarterly crude oil production data are subject to short-term fluctuations as well as revisions as more complete data become available, fourth quarter production in the lower 48, rather than continuing the quarter-by-quarter decline of recent years, apparently stayed even with the third quarter output of about 5.4 million B/D.

Imports

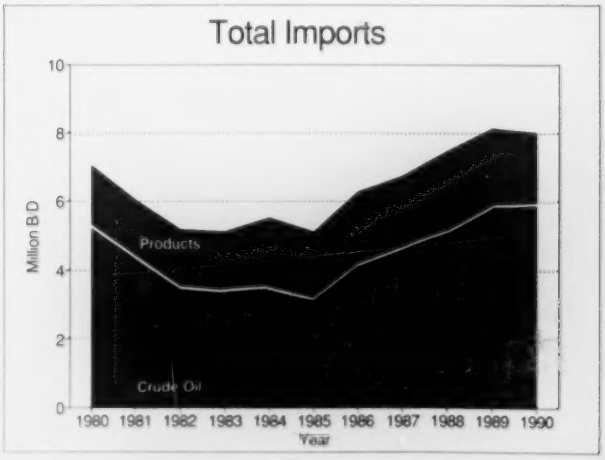
INCREASES LEVEL OFF IN 1990.

After rising more than 60 per cent between 1985 and 1989, imports remained steady in 1990. Inventories had been drawn down to below-typical levels at the end of 1989, resulting in a net inventory draw during 1989 and a net build in 1990 which added roughly 200 thousand B/D to the 1990 year-to-year comparision versus 1989. However, this was roughly counterbalanced by reduced import requirements resulting from the year's weather-related weakness versus the prior year in heating fuel demand. Thus, if adjusted for these factors, the underlying trend in imports for the year would still have been more or less flat.

Because imports remained steady while deliveries declined, total import's share of domestic deliveries rose slightly in 1990 to 46.9 percent from 46.2 percent in 1989. Imports' share of domestic deliveries varied widely throughout the year, in large part the result of inventory behavior. Over the first seven months, strong inventory building helped to push imports' share for the period to 50 percent.

In the latter part of the year, as inventory draws took the place of some current imports, total imports' share dropped to around 40 percent in the fourth quarter. However, adjusted for inventory changes, the fourth quarter figure would have been about 45 percent. Though for the year as a whole, total imports' share of domestic deliveries was up only slightly from the prior year in 1990, the figures for the past two years have been exceeded only by the 47.7 percent high reached in 1977.

Product imports declined 6.5 percent in 1990, with their largest decline of the year occurring in the fourth quarter. Because of weakening product demand and domestic product prices which were often more attractive than those of foreign supplies, product imports fell an average 18 percent for the last three months of the year.



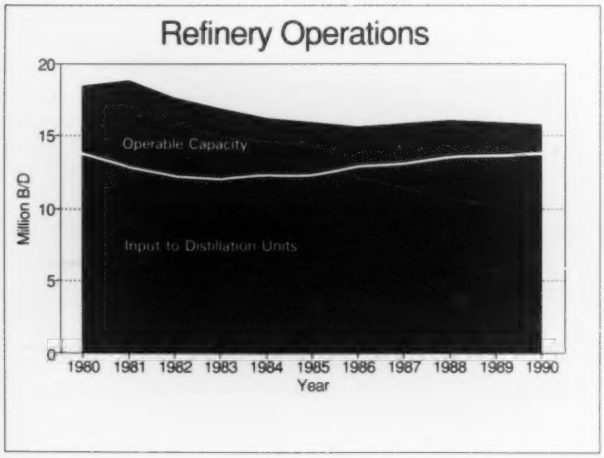
Refinery Operations

RUNS SLACKEN, BUT JET OUTPUT SETS NEW HIGH.

The annual average increase in input to distillation units of 0.3 percent in 1990 suggests slight growth in refining activity, but the trend, at least towards the end of the year, was actually one of decline. Refinery activity, roughly paralleling developments in deliveries, slackened in the fourth quarter after high levels earlier in the year. Input to distillation units, up 1.4 percent for the first nine months, fell 2.9 percent, year to year, for the fourth quarter.

In line with product-by-product developments in deliveries, output of major fuels, except for kerosine jet fuel, also slowed. Fourth quarter gasoline output slipped 0.5 percent, distillate fuel oil, 5.3 percent, and residual fuel oil, 17.8 percent. Kerosine jet fuel production, however, reflecting continued growth in deliveries for that fuel, averaged 1.4 million B/D during the fourth quarter, up nearly 12 percent from a year ago and the highest quarterly level ever. Annual jet fuel production rose nearly 7 percent.

For the year as a whole, utilization of capacity in actual operation averaged about 90.7 percent, marginally ahead of that of 1989, which had been only about one point below the estimated annual high reached in the late 1970s. However, by the fourth quarter, utilization of capacity in actual operation had slipped to less than 87 percent, down from 89.3 percent for the same period one year earlier. Utilization of reported capacity over 1990 averaged 87.3 percent.



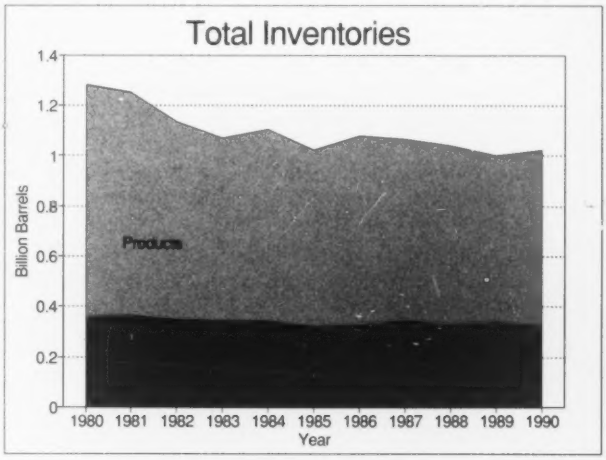
Inventories

STOCK DRAW SINCE AUGUST AVERAGES 600 THOUSAND B/D.

The year's pattern for total inventories consisted of a strong build through July, followed by a substantial draw during the remainder of the year. During the first seven months, inventories rose 122 million barrels, including a 50 million barrel jump during January to rebuild stocks that had been drawn down in response to December 1989's extremely high, weather-related demand. By the end of July, total inventories amounted to nearly 1,125 million barrels, 50 million barrels above the level of the previous July.

However, inventories were drawn down substantially over the remainder of the year—by 96 million barrels, or at a rate of over 600 thousand B/D. (Based on recent historical data, a more typical draw would have been 50-60 thousand B/D). Total inventories, at 1,028 million barrels, still ended the year about 26 million barrels ahead of a year ago, but this was in large part the result of a comparison against the weather-related, lower-than-typical level of stocks at the end of December 1989. Based on data from recent years prior to 1989, 1990's ending stocks were towards the lower end of a more typical year-end range of 1,025 to 1,080 million barrels.

More than half of the draw on total stocks over the last five months of the year was in crude oil stocks, which fell 55 million barrels to 324 million barrels, also towards the lower end of typical year-end levels for recent years. Gasoline stocks ended the year at 223 million barrels, up about 10 million barrels from a year ago, and distillate stocks, at 130 million barrels, were nearly 25 million barrels higher than December 1989's demand-related low level—but not out of line with more typical December levels.



1/ Total supply, i.e., production plus imports adjusted for net stock change is equal to total products supplied from primary storage. Total products supplied from primary storage less exports is equal to total domestic products supplied. Information contained in this report is derived from information published in the API Weekly Bulletin and is based on historical analysis of the industry. All data reflect the most current information available to the API and include all previously published revisions.

2/ Includes lease condensate.

3/ API data do not include crude oil imported for the Strategic Petroleum Reserve (SPR) nor crude oil stocks held in the SPR (according to the U.S. Department of Energy, the SPR held approximately 586 million barrels as of December 31, 1990).

ESTIMATED UNITED STATES PETROLEUM BALANCE
(Daily Average in Thousands of 42 Gallon barrels)

Products Supplied/Supply From Primary Storage	DECEMBER			YEAR-TO-DATE		
	1990[1]	1989[2]	% Change	1990[3R]	1989[2]	% Change
Products Supplied:						
Total motor gasoline	7,027	7,410	(5.2)	7,206	7,328	(1.7)
Finished leaded motor gasoline/*	248	483	(48.7)	385	821	(53.1)
Finished unleaded motor gasoline/*	6,779	6,927	(2.1)	6,821	6,507	4.8
Naphtha-jet	187	204	(8.3)	182	205	(11.2)
Kerosine-jet	1,391	1,541	(9.7)	1,314	1,284	2.3
Distillate fuel oil	3,094	3,914	(21.0)	3,050	3,157	(3.4)
Residual fuel oil	1,295	1,870	(30.7)	1,225	1,370	(10.6)
All other oils[4]	4,054	4,085	(0.8)	4,131	4,132	0.0
Reclassified[5]	-180	-166	8.4	-148	-151	(2.0)
Total domestic products supplied	16,868	18,858	(10.6)	16,960	17,325	(2.1)
Exports	899	1,067	(15.7)	813	859	(5.4)
Total products supplied	17,767	19,925	(10.8)	17,773	18,184	(2.3)
Supply:						
Domestic production:						
Crude oil/6	7,282	7,337	(0.7)	7,224	7,613	(5.1)
Natural gas liquids	1,625	1,343	21.0	1,545	1,546	(0.1)
Other supply[7]	937	1,029	(8.9)	1,118	922	21.3
Total domestic supply	9,844	9,709	1.4	9,887	10,081	(1.9)
Imports:						
Crude oil, total[8]	5,040	5,452	(7.6)	5,884	5,787	1.7
Canadian	638	613	4.1	633	630	0.5
Other	4,402	4,839	(9.0)	5,251	5,157	1.8
Products, total	1,806	2,116	(14.7)	2,073	2,217	(6.5)
Residual fuel oil	441	680	(35.1)	497	629	(21.0)
Other	1,365	1,436	(4.9)	1,576	1,588	(0.8)
Total imports	6,846	7,568	(9.5)	7,957	8,004	(0.6)
Total supply	16,690	17,277	(3.4)	17,844	18,085	(1.3)
Stock change, all oils	-1,077	-2,648	*****	71	-99	*****
Refinery Operations						
Input to crude oil distillation units	12,981	13,244	(2.0)	13,591	13,551	0.3
Operable capacity	15,591	15,761	(1.1)	15,565	15,701	(0.9)
Refinery utilization (%)[9]	83.3	84.0	(0.8)	87.3	86.3	1.2
Crude oil runs	12,770	13,165	(3.0)	13,410	13,401	0.1

Stocks (millions bbls.)	1990		1989[2]	% Change from	
	Dec. 31[10]	Nov. 30[10]	Dec. 30	Previous Month	Year Ago
Crude oil[8]	324.3	335.1	341.3	(3.2)	(5.0)
Unfinished oils	99.1	108.4	106.2	(8.6)	(6.7)
Total motor gasoline/**	223.1	221.2	213.4	0.9	4.5
Finished leaded motor gasoline/*	10.2	9.7	17.7	5.2	(42.4)
Finished unleaded motor gasoline/*	173.5	171.7	159.4	1.0	8.8
Naphtha-jet	6.0	6.5	6.4	(7.7)	(6.3)
Kerosine-jet	44.8	45.3R	34.5	(1.1)	29.9
Distillate fuel oil	129.8	132.9	105.7	(2.3)	22.8
Residual fuel oil	49.3	51.0	43.8	(3.3)	12.6
All other oils	151.1	160.5R	150.3	(5.9)	0.5
Total all oils	1,027.5	1,060.9R	1,001.6	(3.1)	2.6

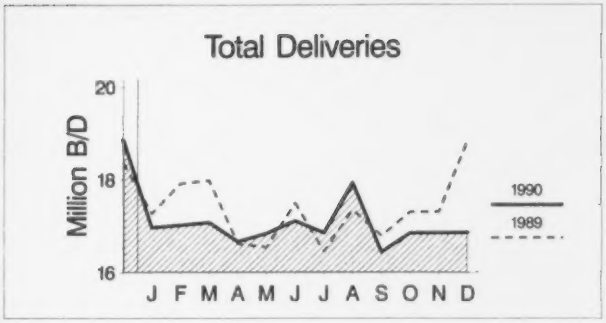
/1 Based on API estimated data converted to a monthly basis.
/2 Source: U.S. Department of Energy.
/3 January-October, DOE, November-December,API.
/4 Includes crude losses.
/5 Beginning with January 1981, U.S. Department of Energy began using a new data collection system which encompasses a method to ascertain the amount of product reclassified during the production phase. So that there will be no double counting of these volumes, they are subtracted from the total domestic products supplied.
/6 API estimate; includes lease condensate.
/7 Includes Unaccounted-for crude oil, Processing gain and Field Production of other hydrocarbons and alcohol.
/8 Data do not include oil imported for the Strategic Petroleum Reserve (SPR) nor crude oil stocks held in the SPR.
/9 Represents "Input to crude oil distillation units" as a percent of "Operable capacity".
/10 Derived by interpolating API weekly stocks data.
/R Revised.
/* Included in motor gasoline.
/** Includes finished leaded, finished unleaded, and motor gasoline blending components stocks.

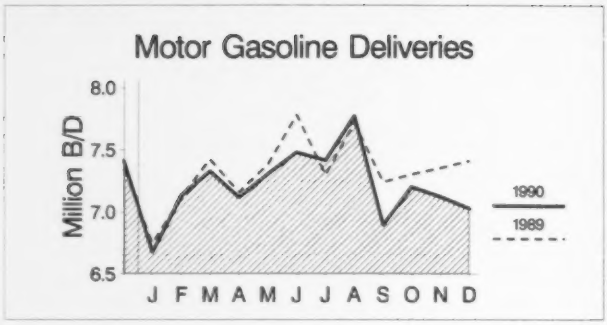
ESTIMATED UNITED STATES PETROLEUM BALANCE
(Daily Average in Thousands of 42 Gallon barrels)

Products Supplied/Supply From Primary Storage	4TH QUARTER 1990[1]	1989[2]	%Change
Products Supplied:			
Total motor gasoline	7,116	7,355	(3.2)
Finished leaded motor gasoline/*	304	580	(47.6)
Finished unleaded motor gasoline/*	6,812	6,775	0.5
Naphtha-jet	183	203	(9.9)
Kerosine-jet	1,385	1,377	0.6
Distillate fuel oil	3,082	3,452	(10.7)
Residual fuel oil	1,098	1,470	(25.3)
All other oils[3]	4,186	4,160	0.6
Reclassified/[4]	-188	-187	0.5
Total domestic products supplied	16,862	17,830	(5.4)
Exports	899	944	(4.8)
Total products supplied	17,761	18,774	(5.4)
Supply:			
Domestic production:			
Crude oil[5]	7,231	7,441	(2.8)
Natural gas liquids	1,625	1,434	13.3
Other supply[6]	1,192	893	33.5
Total domestic supply	10,048	9,768	2.9
Imports:			
Crude oil, total[7]	5,075	5,908	(14.1)
Canadian	631	599	5.3
Other	4,444	5,309	(16.3)
Products, total	1,741	2,133	(18.4)
Residual fuel oil	391	603	(35.2)
Other	1,350	1,530	(11.8)
Total imports	6,816	8,041	(15.2)
Total supply	16,864	17,809	(5.3)
Stock change, all oils	-897	-965	*****
Refinery Operations			
Input to crude oil distillation units	13,052	13,441	(2.9)
Operable capacity	15,616	15,738	(0.8)
Refinery utilization (%)[8]	83.6	85.4	(2.1)
Crude oil runs	12,825	13,314	(3.7)

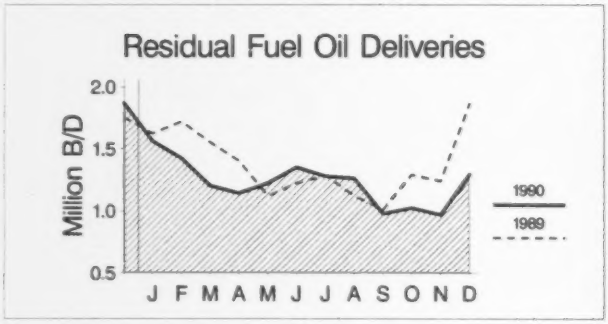
Stocks (millions bbls.)	4TH QUARTER 1990[9]	1989[2]	% Change
Crude oil[7]	324.3	341.3	(5.0)
Unfinished oils	99.1	106.2	(6.7)
Total motor gasoline/**	223.1	213.4	4.5
Finished leaded motor gasoline/*	10.2	17.7	(42.4)
Finished unleaded motor gasoline/*	173.5	159.4	8.8
Naphtha-jet	6.0	6.4	(6.3)
Kerosine-jet	44.8	34.5	29.9
Distillate fuel oil	129.8	105.7	22.8
Residual fuel oil	49.3	43.8	12.6
All other oils	151.1	150.3	0.5
Total all oils	1,027.5	1,001.6	2.6

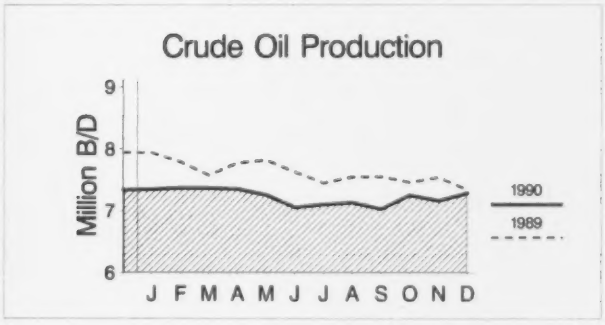
/1 Source: U.S. Department of Energy, October: November-December, API.
/2 Source: U.S. Department of Energy.
/3 Includes crude losses.
/4 Beginning with January 1981, U.S. Department of Energy began using a new data collection system which encompasses a method to ascertain the amount of product reclassified during the production phase. So that there will be no double counting of these volumes, they are subtracted from total domestic products supplied.
/5 API estimate; includes lease condensate.
/6 Includes Unaccounted-for crude oil, Processing gain and Field Production
/7 Data do not include oil imported for the Strategic Petroleum Reserve (SPR) nor crude oil stocks held in the SPR.
/8 Represents "Input to crude oil distillation units" as a percent of "Operable capacity".
/9 Derived by interpolating API weekly stocks data.
/R Revised.
/* Included in motor gasoline.
/** Includes finished leaded, finished unleaded, and motor gasoline blending components stocks.

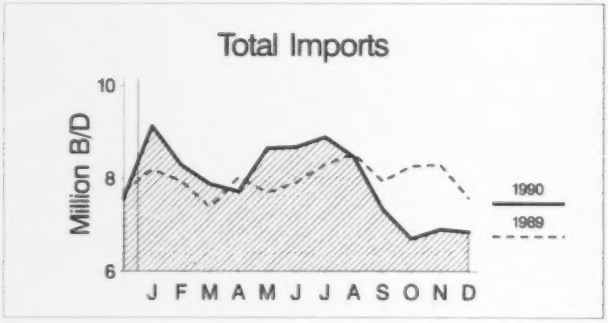

Total Deliveries
Million B/D
20
18
16
J F M A M J J A S O N D
1990
1989

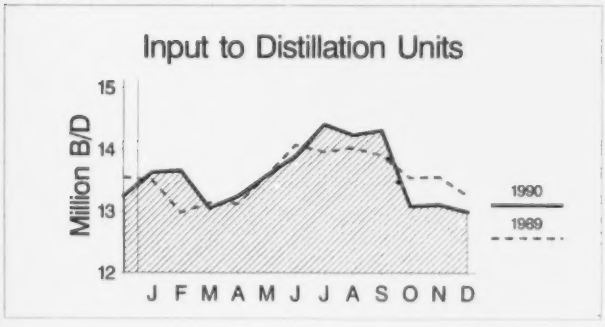

Motor Gasoline Deliveries
Million B/D
8.0
7.5
7.0
6.5
J F M A M J J A S O N D
1990
1989

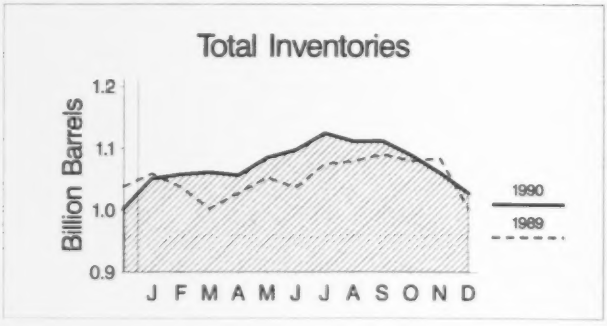
Distillate Deliveries
Million B/D
4.0
3.5
3.0
2.5
J F M A M J J A S O N D
1990
1989


Residual Fuel Oil Deliveries
Million B/D
2.0
1.5
1.0
0.5
J F M A M J J A S O N D
1990
1989


Crude Oil Production
Million B/D
9
8
7
6
J F M A M J J A S O N D
1990
1989


Total Imports
Million B/D
10
8
6
J F M A M J J A S O N D
1990
1989


Input to Distillation Units
Million B/D
15
14
13
12
J F M A M J J A S O N D
1990
1989


Total Inventories
Billion Barrels
1.2
1.1
1.0
0.9
J F M A M J J A S O N D
1990
1989

A2575-2

American Petroleum Institute
1220 L Street, Northwest
Washington, D.C. 20005

Monthly Statistical Report

Prepared by the Finance, Accounting, and Statistics Department

Vol. 15, No.1

FEBRUARY 13, 1991

JANUARY 1991

SUMMARY

Total deliveries fell 1.4 percent in January versus the prior year—substantially less than the fourth quarter's decline of over 5 percent. There is less disparity between the two periods, however, than appears on the surface. The fourth quarter's drop had been exaggerated by the temporary effects of weather on heating-related demand in both 1989 and 1990, without which the fourth quarter's year-to-year decline would have been an estimated 2 to 3 percent.

This January's decline, on the other hand, was understated due to comparison against below-trend deliveries a year ago. Deliveries in January 1990 had been unusually low, in part because of the depressing effect on heating-related demand of weather more than 20 percent warmer than normal. Had the year-ago figure been more in line with the then-existing trend, deliveries this January would have been down more than 3 percent. In other words, after adjusting for the temporary effects of weather, petroleum consumption seems to be declining at about the same 2 to 3 percent rate as observed in the last part of 1990. The underlying trends in consumption for the individual major products are estimated to have been declining as well in January, with the possible exception of jet fuel which was likely flat at best.

January's crude oil production in Alaska, with some of the prior months' temporary difficulties with weather and other factors receding, exceeded year-ago production for the second time in the past four months. As a result of last year's enhancements to North Slope facilities and accelerated well fracturing, Alaskan output reached nearly 1.9 million B/D, up nearly 2 percent, year to year. Production in the lower 48, though holding steady compared with recent prior months, fell 3.1 percent year to year, and for the U.S. as a whole, production slipped 1.9 percent.

Total imports fell 20 percent in January from one year earlier, to 7.3 million B/D—but because of differences in inventory behavior, rather than any substantial shift in underlying import dependence. Imports had surged last January in order to replenish stocks drawn down by unusually strong, weather-related demand in the prior month. This January, by contrast, draws on inventories continued to offset a significant portion of current imports, as they have since August. Had these supplies come from imports rather than inventories during January, imports would have averaged about 8.0 million B/D, roughly the same as the average level for all of last year.

With January's draw, total inventories declined to 1,014 million barrels, among the lowest monthly levels of the past several years. Stocks of crude oil, gasoline, and distillate ended the month at levels lower than for Januarys of recent years but were still well above minimum operating levels.

Reflecting continued weakness in underlying demand, input to distillation units dropped 6.3 percent from last January. Output of most major products, except kerosine jet fuel, dropped as well. Utilization was at the lowest monthly rate in nearly three years.

PRODUCT SUPPLIED [1]

Gasoline

FLAT DELIVERIES, DECLINING CONSUMPTION.

Gasoline deliveries, after a roughly 3 percent decline in last year's fourth quarter, were essentially flat in January versus a year ago. The majority of indicators, however, strongly suggest a decline in consumption for the month.

Part of the apparent anomaly results from comparison against unusually low deliveries last January. Weak deliveries then, counter-balancing the unusually strong deliveries that had occurred in the prior month, were an estimated 100 thousand B/D below the then-prevailing trend. Compared against a more typical level for last January, deliveries would have declined 1.5 percent—still not in complete correspondence with other indicators of demand, which suggest a consumption decline of 2 to 3 percent.

Preliminary estimates of economic growth for the fourth quarter, for example, show nearly flat performance versus a year ago (and a 2 percent quarter-to-quarter, annualized decline from the third quarter). This contrasts with year-to-year gains of around 1 percent earlier last year and suggests a related dampening of gasoline usage of perhaps half a percent.

In addition, although retail gasoline prices have fallen substantially in recent months, they were still above pre-August lev-

API ESTIMATES
JANUARY

	Million B/D	Percent Change
Total domestic deliveries	16.7	(1.4)
Crude production[2]	7.4	(1.9)
Total imports[2]	7.3	(20.0)
Stocks (million bbl)[2]	1,014	(3.6)

els during January, providing another moderating influence on demand. Retail prices at month-end were more than 15 cents per gallon lower than in late November. However, they were still up roughly 15 cents versus levels before the Iraqi invasion last August, although a third of this was accounted for by the December 1 increase in Federal excise taxes. Eight states have also increased taxes by anywhere from 0.5 to 6 cents per gallon since the beginning of last August.

The influence of prices and a slowing economy are evident in data on miles traveled, which continue to show flat performance for the most recent periods available; in the first part of last year, miles traveled had been increasing at an average 3 percent rate. Thus, the evidence from the economy, price levels, and travel all indicate a continued decline for gasoline consumption in January.

Distillates

STRONG INCREASE PARTLY DUE TO YEAR-AGO WEATHER. Distillate deliveries' 9.3 percent, roughly 300 thousand B/D jump for January was largely, but not entirely, explainable as weather-related. Weather a year ago had averaged more than 20 percent warmer than normal, the warmest January in nearly forty years. With this January's weather closer to normal, we estimate that weather effects accounted for about two thirds of the year-to-year increase in deliveries. However, the remaining, weather-adjusted increase of around 3 percent still shows greater strength in deliveries for the month than is probable for underlying consumption.

Though colder weather this January than last boosted heating-related demand, outside these markets, distillate fuel oil consumption most likely fell in January. With industrial production off 1.4 percent, year to year, in December, rail ton-miles off about 7 percent in January, and other indicators generally concurring, consumption in the industrial, transportation, and off-highway diesel markets has undoubtedly been slipping.

Thus, overall distillate consumption is estimated to have been declining at a roughly 3 percent rate. Though January's deliveries were apparently stronger, even adjusted for weather, than implied by recent consumption trends, such short-term variability has not been unusual for distillate fuel oil deliveries. In fact, December's deliveries, in contrast to January's, had been weaker than other indicators would suggest.

Residual Fuel Oil

LARGE DECLINES CONTINUE. Residual fuel deliveries fell nearly 25 percent in January, moderating only slightly from the 31 percent rate of decline seen last month. However, while December's dramatic drop was at least partially the result of high demand caused by severe weather a year ago, the January decline came amid weather which was 20 percent colder than last year, and electricity demand which was up in most of the country. Last year, prior to the Iraqi invasion of Kuwait, deliveries were averaging over 1.3 million B/D. While they remained close to this level during August, they have fallen rather dramatically in the months since, averaging less than 1.1 million B/D since September.

Fuel substitution by utilities continues to provide the primary explanation for the year-to-year deliveries decline. For the month, electricity generation rose moderately above trend (growing by about 5 percent nationwide and by about 3 percent in the Northeast), but price differentials and natural gas availability continued to encourage gas use where possible. The gas surplus caused by slack heating demand early in the season meant that more abundant supplies were available for utility use at prices low relative to resid. While spot prices for resid fell about 30 percent during the month, these drops were matched by comparable declines in the price of natural gas, which already enjoyed a price advantage on a per-BTU basis.

Kerosine Jet Fuel

CONSUMPTION WEAKENS. Jet fuel deliveries fell by 6.1 percent in January. Excepting last month, the decline was the sharpest drop in eight years. However, unlike December, whose 9.7 percent drop was explainable by atypically high deliveries a year ago, the January decline is believed to reflect a drop in the underlying trend of consumption growth, estimated to be flat. The impact of the war on international travel, the shutdown of Eastern airlines, cutbacks by other U.S. air carriers, and a generally weak economy were all contributing factors to jet fuel's weakening.

Preliminary estimates suggest that the rate of growth in miles flown dropped in January, although by less than declines in jet fuel deliveries. Averaging about five percent growth during the fourth quarter, growth in miles flown is believed to have been flat in January, and was perhaps negative during the second half of the month. The suspension of flight services by Eastern on January 18 is believed to have been an important force at work during the month. Eastern was the number eight airline in the U.S., accounting for an estimated 3-4 percent of all miles flown. Its absence from the market place cut into deliveries by reducing the underlying rate of consumption.

Eastern's demise no doubt had a smaller impact on passenger travel than a simple look at its market share would suggest, as many would-be passengers merely flew other airlines. Because load factors on domestic flights during the fourth quarter of 1990 had been about 2 points below those of a year ago, it is believed that other airlines were able to accommodate these passengers without adding many extra flights.

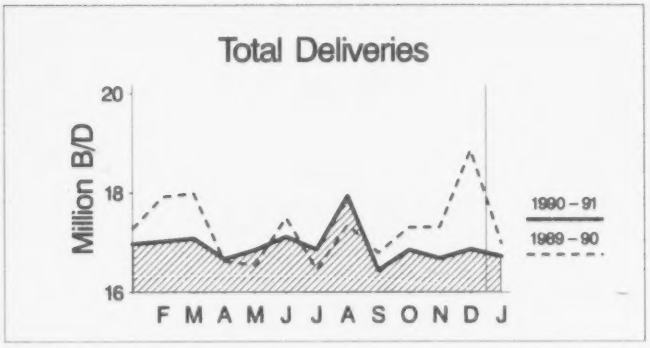
The outbreak, on January 16, of what has been an intensive air war in the Persian Gulf has increased overseas military jet fuel demand by as much as 500 thousand B/D from normal levels, according to some estimates. While causing a surge in demand abroad, the war has had a mitigating impact on jet fuel growth in the States, in part by reducing domestic military demand, but more importantly, by suppressing growth in international travel.

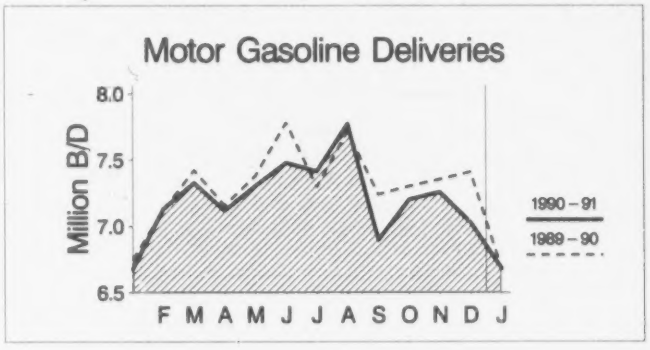
This segment of the market, accounting for nearly a quarter of miles flown, had been growing at double digit rates through the end of last year. However, travel abroad, particularly travel to Europe and the Mediterranean, is down significantly since the start of war. For instance, two major airlines serving trans-Atlantic routes are reported to have seen declines in bookings on these routes of 35 percent or more since the outbreak of war. If drops of this magnitude were typical of all trans-Atlantic carriers, and if Latin American and trans-Pacific travel saw only moderate declines in growth, then total international travel could easily have been down by more than 10 percent during the sec-

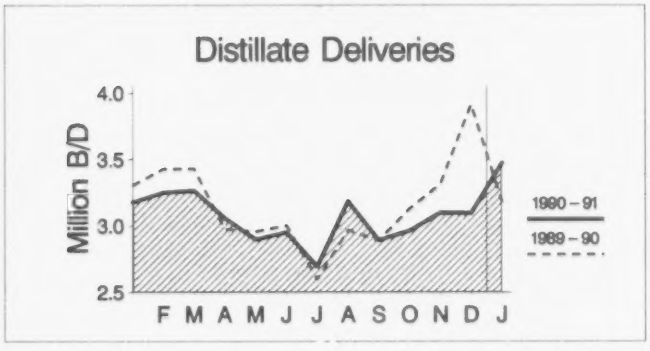
ond half of the month. Of course, a drop in bookings does not necessarily translate into an immediate drop in aircraft miles. Thus, the extent of international decline may not have been fully evident in January.

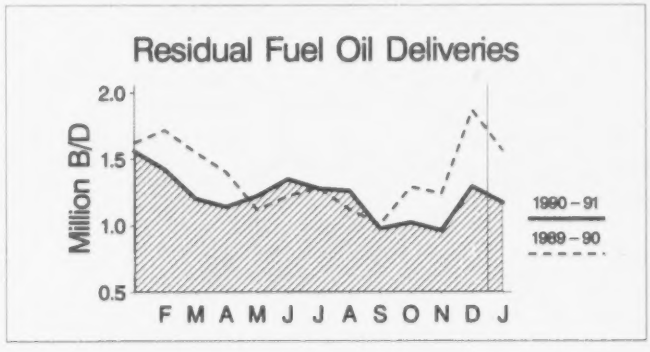
Other Oils

UP VERSUS WEAK JANUARY A YEAR AGO. Deliveries of "other oils" rose 2.9 percent in January over the depressed levels of one year earlier. Deliveries last January had been weak, particularly among the LPGs, due to the warm weather's effect on propane for heating and slack purchases of ethane for petrochemical feedstock use. Compared with the level of deliveries in more recent months, and taking into account typical seasonal patterns, deliveries of "other oils" appear to be sharing the weakness indicated for other petroleum products.









SUPPLY[1/]

Production

ALASKAN OUTPUT UP, YEAR TO YEAR. Declining at less than half the rate of last year's average 5 percent drop, domestic crude oil production slipped 1.9 percent in January. Output in Alaska, in particular, actually rose year to year by nearly 2 percent, the result of last summer's facilities enhancements and the accelerated well fracturing program on the North Slope. The full potential of North Slope facilities had been hampered by stormy weather and problems with tanker availability in the previous two months, but January's output reached nearly 1.9 million B/D, the highest monthly level since December 1989.

The apparent moderation in the decline in lower 48 production appears to be continuing as well. Output outside Alaska held roughly steady in January compared with prior months' production, at about 5.5 million B/D. Year to year, however, lower 48 production still fell 3.1 percent.

Imports

YEAR-TO-YEAR DROP THE RESULT OF STOCK DIFFERENCES. Total imports in January, reflecting the fact that a significant portion—more than 750 thousand B/D in January—of current U.S. supplies have continued to come from domestic inventories rather than from current imports, averaged 7.3 million B/D. Imports last January, in contrast, had reached the highest monthly level in nearly thirteen years, reflecting the replenishment of inventories at a rate of over 1.5 million B/D following the substantial drawdown in response to the weather-related surge in demand during December 1989.

Thus, January's 20 percent decline in imports was more the result of contrasting inventory behavior than of any marked shift in underlying import dependence. Without the stock draw, the month's imports would have averaged about 8.0 million B/D, in line with the average level of imports in 1990.

Mostly for similar reasons, January's product imports were down more than 1 million B/D from the prior January's level of more than 2.9 million B/D, which had been the highest monthly level since the late 1970s. However, over the last several months product imports have been running at lower levels than earlier, a result of weakening domestic demand and foreign prices which have often been less attractive to purchasers than for domestic products. Over the past five months, product imports have averaged 1.7 million B/D, versus levels in early 1990 that had typically been in the 2.1 to 2.3 million B/D range.

Imports of finished gasoline for the month averaged 240 thousand B/D, down about 180 thousand B/D, and imports of

distillate fuel oil averaged about 180 thousand B/D, versus more than twice that level a year ago. Residual fuel oil imports dropped by more than half to about 370 thousand B/D. Imports of kerosine jet fuel, for which domestic inventories are currently ample while demand appears to be weakening, dropped from 155 thousand B/D a year ago to 55 thousand B/D this January.

Refinery Operations

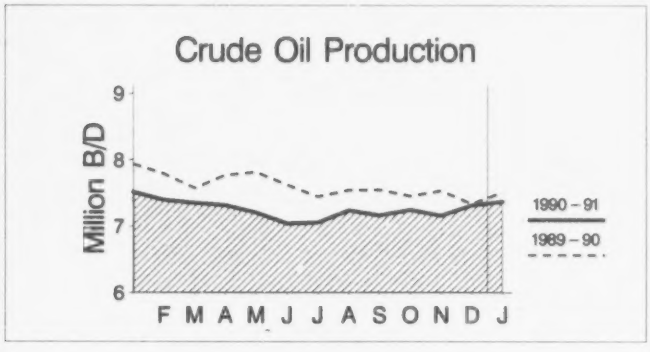
UTILIZATION FALLS. Refinery activity continued to slacken in January, with input to distillation units down 6.3 percent from last January's level. Output of gasoline fell 4.3 percent, distillate fuel oil, 9.3 percent from strong levels a year ago, and residual fuel oil, 14 percent. However, though emphasis on kerosine jet fuel lessened in January as output slipped to 1.33 million B/D from levels as high as 1.43 million B/D in recent months, output was still up 2.3 percent over last January.

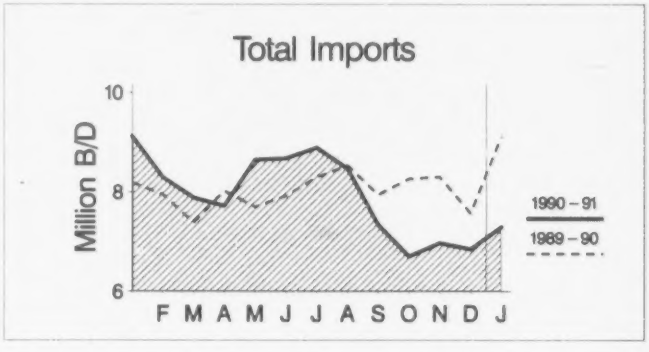
Utilization of active capacity was down to about 85 percent for the month, while on the basis of reported capacity, it was calculated at 81.6 percent. This was the lowest monthly rate in nearly three years.

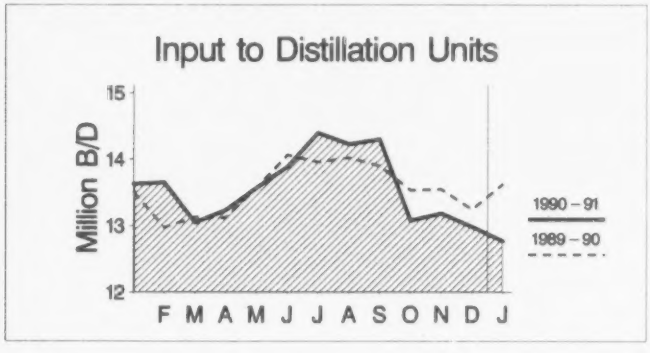
Inventories

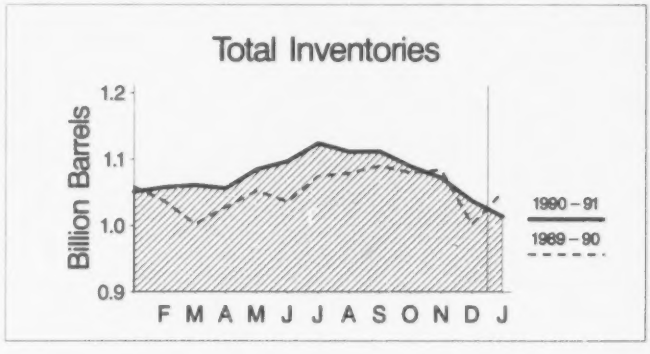
STOCK DRAW CONTINUES. Maintaining the trend evident since last August, total inventories continued to decline in January. The 24 million barrel drop contrasts with inventories which have averaged little change for that month in recent years (excluding last January's unusually sizable build). Since the end of last July, inventories have fallen 110 million barrels, contributing about 600 thousand B/D to supplies over the period. At 1,014 million barrels, they are among the lowest month-end levels of the last several years, but considered adequate for current needs.

Crude stocks rose 4 million barrels to 328 million barrels at month-end, still lower than typical for recent years but 28 million barrels above estimated minimum operating levels. Gasoline stocks rose 2 million barrels to 225 million barrels, and distillate fuel oil inventories dropped 19 million barrels to 111 million barrels, also lower than January levels of recent years but 20 to 25 million barrels above estimated minimum operating levels. Kerosine jet fuel inventories, however, at 45 million barrels, were among the highest ever of recent years.









1/ Total supply, i.e., production plus imports adjusted for net stock change is equal to total products supplied from primary storage. Total products supplied from primary storage less exports is equal to total domestic products supplied. Information contained in this report is derived from information published in the API Weekly Bulletin and is based on historical analysis of the industry. All data reflect the most current information available to the API and include all previously published revisions.

2/ Includes lease condensate.

3/ API data do not include crude oil imported for the Strategic Petroleum Reserve (SPR) nor crude oil stocks held in the SPR (according to the U.S. Department of Energy, the SPR held approximately 586 million barrels as of January 31, 1991).

ESTIMATED UNITED STATES PETROLEUM BALANCE
(Daily Average in Thousands of 42 Gallon barrels)

Products Supplied/Supply From Primary Storage	JANUARY			YEAR-TO-DATE		
	1991[1]	1990[2]	% Change	1991[3R]	1990[2]	% Change
Products Supplied:						
Total motor gasoline	6,679	6,675	0.1			
Finished leaded motor gasoline/*	280	404	(30.7)			
Finished unleaded motor gasoline/*	6,399	6,271	2.0			
Naphtha-jet	172	182	(5.5)			
Kerosine-jet	1,285	1,369	(6.1)			
Distillate fuel oil	3,474	3,177	9.3			
Residual fuel oil	1,172	1,561	(24.9)			
All other oils[4]	4,112	3,997	2.9			
Reclassified[5]	-172	7	*****			
Total domestic products supplied	16,722	16,968	(1.4)			
Exports	1,016	710	43.1			
Total products supplied	17,738	17,678	0.3			
Supply:						
Domestic production:						
Crude oil[6]	7,370	7,510	(1.9)			
Natural gas liquids	1,708	1,525	12.0			
Other supply[7]	607	1,063	(42.9)			
Total domestic supply	9,685	10,098	(4.1)			
Imports:						
Crude oil, total[8]	5,604	6,182	(9.3)			
Canadian	779	599	30.1			
Other	4,825	5,583	(13.6)			
Products, total	1,690	2,941	(42.5)			
Residual fuel oil	371	809	(54.1)			
Other	1,319	2,132	(38.1)			
Total imports	7,294	9,123	(20.0)			
Total supply	16,979	19,221	(11.7)			
Stock change, all oils	-759	1,543	*****			
Refinery Operations						
Input to crude oil distillation units	12,768	13,628	(6.3)			
Operable capacity	15,654	15,533	0.8			
Refinery utilization (%)[9]	81.6	87.7	(7.0)			
Crude oil runs	12,574	13,499	(6.9)			

Stocks (millions bbls.)	1990-1991		1990[2]	% Change from	
	Jan. 31[10]	Dec. 31[10]	Jan. 31	Previous Month	Year Ago
Crude Oil	328.0	324.3	352.3	1.1	(6.9)
Unfinished oils	100.2	99.1	103.5	1.1	(3.2)
Total motor gasoline/**	224.7	223.1	236.0	0.7	(4.8)
Finished leaded motor gasoline/*	9.7	10.2	17.8	(4.9)	(45.5)
Finished unleaded motor gasoline/*	176.5	173.5	177.8	1.7	(0.7)
Naphtha-jet	5.7	6.0	6.4	(5.0)	(10.9)
Kerosine-jet	44.6	44.8	36.4	(0.4)	22.5
Distillate fuel oil	110.7	129.8	117.9	(14.7)	(6.1)
Residual fuel oil	48.3	49.3	49.7	(2.0)	(2.8)
All other oils	151.3	160.7R	148.8	(5.8)	1.7
Total all oils	1,013.5	1,037.1R	1,051.0	(2.3)	(3.6)

/1 Based on API estimated data converted to a monthly basis.
/2 Source: U.S. Department of Energy.
/3
/4 Includes crude losses.
/5 Beginning with January 1981, U.S. Department of Energy began using a new data collection system which encompasses a method to ascertain the amount of product reclassified during the production phase. So that there will be no double counting of these volumes, they are subtracted from the total domestic products supplied.
/6 API estimate; includes lease condensate.
/7 Includes Unaccounted-for crude oil, Processing gain and Field Production of other hydrocarbons and alcohol.
/8 Data do not include oil imported for the Strategic Petroleum Reserve (SPR) nor crude oil stocks held in the SPR.
/9 Represents "Input to crude oil distillation units" as a percent of "Operable capacity".
/10 Derived by interpolating API weekly stocks data.
/R Revised.
/* Included in motor gasoline.
/** Includes finished leaded, finished unleaded, and motor gasoline blending components stocks.

A2575-2

American Petroleum Institute
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Monthly Statistical Report

Prepared by the Finance, Accounting, and Statistics Department

Vol. 15, No.2

MARCH 13, 1991

FEBRUARY 1991

SUMMARY

Total deliveries fell an unusually large 5.0 percent in February. All major products except kerosine jet fuel shared in the decline, though, particularly for gasoline and distillate fuel oil, deliveries appeared weaker than likely underlying consumption. For total consumption, the underlying decline trend—the result of the continued sluggishness of the economy, combined with the lagged effect of higher product prices in previous months—is estimated to be closer to 2.5 to 3.5 percent.

Crude oil production for February, in contrast to its steady decline trend over the past five years, rose year to year—though only by 1.4 percent. After nearly five years of decline, lower 48 production, which according to the most recently available data has been inching upwards month by month since the middle of last year, was roughly even with year-ago levels—but still more than 20 percent below its 1985 average. Alaskan production also increased year to year for the second month in a row, by 2 percent.

Notably, because of February's unusually large drop in deliveries and the increase in domestic crude oil production, less of the month's nearly 16 percent drop in imports was the reflection merely of stock movements and more of it an indication of fundamental supply/demand factors. We estimate that the underlying trend in imports requirements in February was running about half a million B/D below a year ago.

Product imports, in particular, have remained weak in recent months as a result of sluggish demand and foreign prices which have often been unattractive to domestic purchasers. About four-fifths of February's year-to-year decline in imports was in the form of products. Crude oil imports, on the other hand, have edged up slightly in the early months of 1991, supplemented in February by deliveries from the Strategic Petroleum Reserve averaging about 150 thousand B/D, according to the Department of Energy.

Meanwhile, amounts supplied from the drawdown of primary inventories, which had been taking the place of a significant portion of imports since the end of last July, moderated in February. After being drawn down by over 100 million barrels between the end of July and the end of January—a daily rate of about 600 thousand B/D—total inventories slipped only 3 million barrels in February. Month-end inventories of crude and products continued at levels below recent-year averages, but a moderate cushion above minimum operating levels remained.

Refineries' input to distillation units was up in February from January's low level, but was still down 3.2 percent versus a year ago. Production of distillate fuel oil and kerosine jet fuel, however, still increased 3.5 and 2.9 percent, respectively.

PRODUCT SUPPLIED[1]

Gasoline

DELIVERIES DROP AN UNUSUAL AN 5 PERCENT.

Gasoline deliveries' unusually large, 5.0 percent decline in February considerably exceeded any likely decline in actual consumption, estimated at closer to 2.5-3 percent. The month's deliveries were roughly 150-200 thousand B/D below the trend of recent prior months, if normal seasonal patterns are taken into account. With the rapid decline in prices in recent months, it may be that some distributors and end-users (perhaps commercial users more than individual consumers) concluded that it might be advantageous to delay some purchases.

These price declines resulted at the retail level in a monthly average price for February, adjusted for inflation, only about 5 percent higher than one year earlier—essentially equal to the increase in excise taxes over the period. During last year's fourth quarter, retail prices had averaged nearly 30 percent higher than year-earlier levels on an inflation-adjusted basis.

With the decline in retail prices over the past several months, the continued weakness in gasoline deliveries appears to be increasingly the result of the weak economy more than of higher prices, though the lagged effects of higher prices in earlier months have likely persisted to some extent. The softness in demand is evident in the most recent data on highway travel, which continue to show only marginal growth at best. Once account is taken of the continued improvement in fleet fuel efficiency, this translates into an indicated decline in demand for gasoline roughly in line with the estimated trend.

	API ESTIMATES FEBRUARY		YEAR-TO-DATE	
	Million B/D	Percent Change	Million B/D	Percent Change
Total domestic deliveries	16.2	(5.0)	16.5	(3.1)
Crude production[2]	7.5	1.4	7.5	0.1
Total imports[2]	7.0	(15.9)	7.1	(18.2)
Stocks (million bbl)[2]	1,009	(4.6)	na	na

Distillates

LARGE DECREASE NOT EXPLAINED BY WEATHER. As with gasoline, distillate deliveries fell substantially in February—by 8.1 percent from a year ago, though the underlying trend in consumption is estimated to be closer to a 3 percent decline. As with gasoline, shifts in nonprimary inventories may have distorted the month's deliveries data.

February's unusually warm weather, on the other hand, does little to explain the month's large decline. Though this February's mild weather, roughly 15 percent warmer than normal, weakened demand for heating oil, last February's weather was also unusually mild. Thus, the net effect on the year-to-year comparison was likely negligible.

In fact, the heating season to date has been unusually warm, averaging an unusually large, 10 percent warmer than normal, and more than this in some of the main heating oil consuming regions. By comparison, weather over the 1989-90 heating season, though fluctuating between extremes of both unusually frigid and unusually mild weather, averaged near normal over the period as a whole. Thus, we estimate that over the past five months, warm weather has depressed distillate demand versus the prior year by roughly 100 thousand B/D or 3 percent.

Residual Fuel Oil

DECLINE MODERATES. In contrast with the larger-than-typical declines for gasoline and distillate, deliveries of residual fuel fell 7.2 percent in February—the smallest rate of decline since last August. It was only the second month in the past twelve that resid supplied surpassed the 1.3 million B/D mark. The moderation in the rate of decline (which had averaged 22 percent since August) resulted, in part, from more competitive resid prices, but was at least partially due to below-trend deliveries a year ago. Despite the relative improvement, we still estimate underlying consumption to be dropping by more than 10 percent, year to year.

Resid prices continued to fall in February, thanks both to declining crude costs and to modest electricity demand in the East (up only about 2 percent, even against depressed demand a year ago). At month's end, spot prices were about $3/barrel, or more than 15 percent, lower than prior to the Iraqi invasion. Natural gas prices, meanwhile, also declined, but at month's end, were only about 3 percent lower than the end of July. Still, despite improvement in price competitiveness, high secondary resid inventories and declining resid prices may have encouraged some utilities to put off spot purchases.

Already building last summer before the invasion, utility inventories of resid increased throughout the fall. In the mid-Atlantic states, whose utilities account for about a third of the nation's resid-fired generation, stocks were more than 15 percent above year-before levels on December 1, while consumption in the previous month had dropped nearly 40 percent. Given consumption rates at the time, the year-to-year change in stocks accounted for about 3 weeks of additional supplies. While no utility data are yet available for 1991, it is believed that, with moderate winter weather and abundant natural gas in January and February, utility resid stocks remain relatively high.

Kerosine Jet Fuel

DELIVERIES REVERSE PREVIOUS SLIDE. Jet fuel deliveries rose 6.6 percent in February, ending a two month slide in which they fell 9 percent, year to year. While there is evidence that airline travel picked up during the second half of February from depressed January levels, the growth in jet fuel deliveries reflects below-trend deliveries a year ago more so than a significant pick-up in travel for the month. We estimate miles flown, a good indication of underlying consumption, to have been flat or slightly declining for the month as a whole, but perhaps trending up at month's end.

Growth in passenger travel had been positive, albeit sluggish, in the months leading up to the start of the Persian Gulf War. However, with smaller load factors, aircraft miles were increasing at about 5 percent. After the start of war, that growth was reversed; for January, miles flown declined about 1 percent, and during the second half of that month, the rate of decline is estimated to have been in the 5 percent range. But travel demand reportedly rebounded moderately in early February, and bookings are said to have increased more significantly since the end of the war.

Other Oils

DOWN 4.2 PERCENT FOR THE MONTH. Deliveries of "other oils" dropped 4.2 percent in February, reversing January's increase. Since year-ago deliveries had already been below trend due to warm weather's effect on propane usage and slack purchases of ethane for petrochemical usage, February's decline actually displayed greater weakness than might at first be apparent—but just as with gasoline and distillate fuel oil, likely overstates underlying sluggishness in consumption.

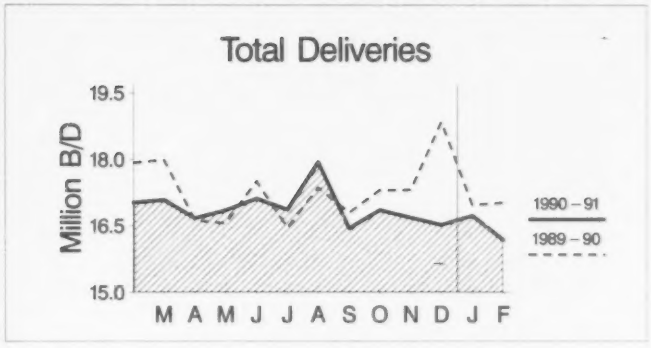
SUPPLY[1]

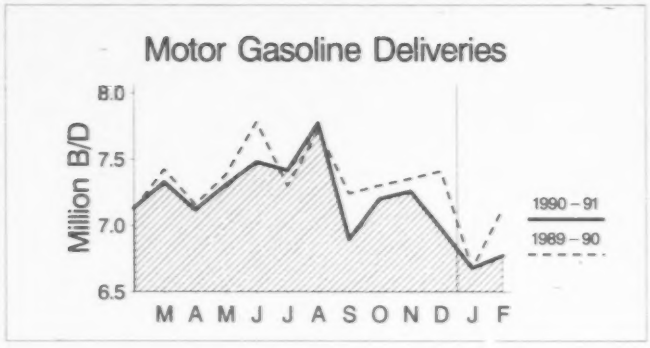
Production

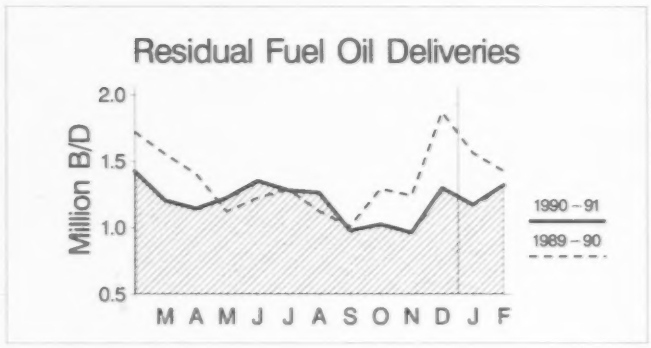
CRUDE OUTPUT INCREASES. Signs that the decline in U.S. crude oil production has been moderating continued to accumulate in February. An extremely rare event in recent years, total domestic crude oil production rose year to year—although only slightly. The 1.4 percent increase contrasts with a decline rate that has averaged about 4 percent per year between 1985 and 1990. Production in Alaska continued to reflect recent production enhancements on the North Slope, rising 2.0 percent over a year ago.

The decline in lower 48 production of the past several years also has apparently been interrupted in recent months. Though production there was only about even with year-ago levels in February, a quarter-by-quarter comparison shows a moderate increase in lower 48 production since the third quarter of last year. Then, production outside Alaska averaged 5.44 million B/D, according to current estimates; fourth quarter production rose to an estimated 5.51 million B/D, and the first two months of this year have averaged 5.55 million B/D.

These increases, though a significant departure from the prior trend, are still relatively small in comparison to the size of the decline of the previous five years. Lower 48 production in







February was still more than 20 percent or 1.6 million B/D below the average 7.1 million B/D produced in 1985. Over that period, Alaskan production, reflecting recent enhancements, was up about 6 percent or 100 thousand B/D.

Natural gas liquids production also rose by about 60 thousand B/D in February. Output in recent months has returned to levels not experienced for a year and a half.

Imports

STRENGTHENING FOR CRUDE, BUT PRODUCTS DOWN.

Particularly noteworthy in February's 1.3 million B/D, nearly 16 percent decline in imports was that, compared with recent prior months, less of it was a reflection merely of differences in inventory movements and more of it an indication of more fundamental factors—in particular, the roughly 850 thousand B/D drop in deliveries and 165 thousand B/D increase in domestic crude oil and NGL production. While it is true that February's imports decline was augmented by a number of unique factors, including the unusually large drop in deliveries and the release of stocks from the Strategic Petroleum Reserve, we estimate that the underlying trend in imports requirements in February was running about half a million B/D below a year ago.

Crude oil imports have edged up in the past month or two as the substantial draw on domestic petroleum inventories, evident since the end of July, has moderated. Crude oil imports had averaged less than 5 million B/D during the fourth quarter, down from over 6 million B/D just prior to the invasion of Kuwait last August. So far this year, crude imports have been running at about 5.6 million B/D.

In February, the commencement of deliveries from the January sale from the Strategic Petroleum Reserve also added to domestic crude oil volumes. According to the Department of Energy, about one quarter of the total 17.3 million barrels sold were delivered, equivalent to about 150 thousand B/D in additional crude oil supplies for the month. (In the petroleum balance which accompanies this report, deliveries from the SPR are reflected under "other supply").

Meanwhile, product imports continued at levels even lower than in recent months. February's 1.3 million B/D was the lowest monthly level in nearly ten years, the result of weaker demand and world prices which have often been unattractive to domestic purchasers. Imports of gasoline, distillate and kerosine jet fuel were all only about 30 to 40 percent of their year-ago levels, while imports of residual fuel oil were down by about a third.

With the season's generally warmer-than-normal weather continuing to depress domestic heating-related demand in February, combined with extreme cold in Europe averaging a substantial 5 to 10 degrees colder than normal from late January into mid-February, incremental distillate supplies in the Atlantic basin likely went to the areas of strongest demand. Thus, although solid data on exports will not be available for another two months, distillate exports were likely higher than typical for February.

Refinery Operations

UP FROM JANUARY, DOWN VERSUS A YEAR AGO.

Refinery activity, though increasing from January's low level, was still down from a year ago in February. Input to distillation units rose from 12.8 million B/D in January to 13.2 million B/D in February, but year to year fell 440 thousand B/D or 3.2 percent. Gasoline production dropped 5.4 percent, mainly the result of a comparison against unusually strong out-

put last February. Distillate and kerosine jet fuel output rose 3.5 percent and 2.9 percent, respectively, while residual fuel oil output declined 1.4 percent.

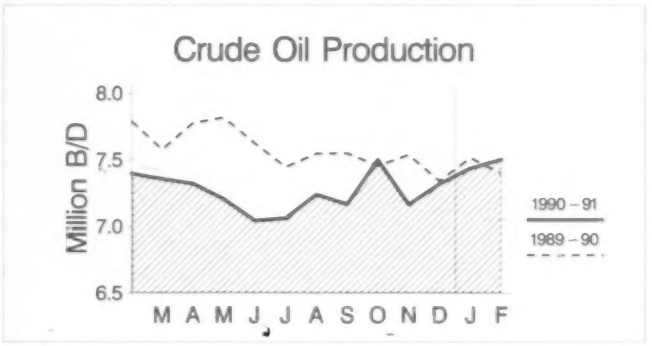
Utilization of capacity in actual operation averaged about 88 percent for the month, while for reported capacity, utilization of 84.4 percent was down 3.5 percentage points from last February's 87.9 percent rate.

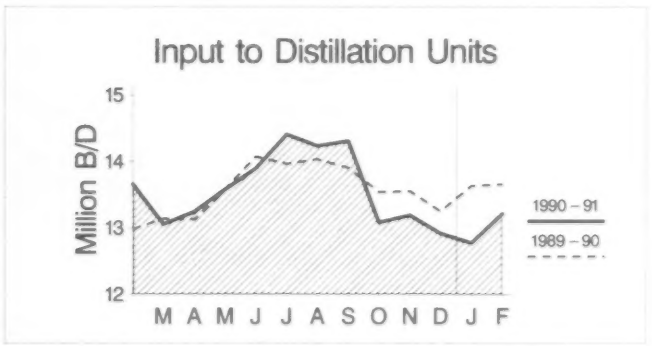
Inventories

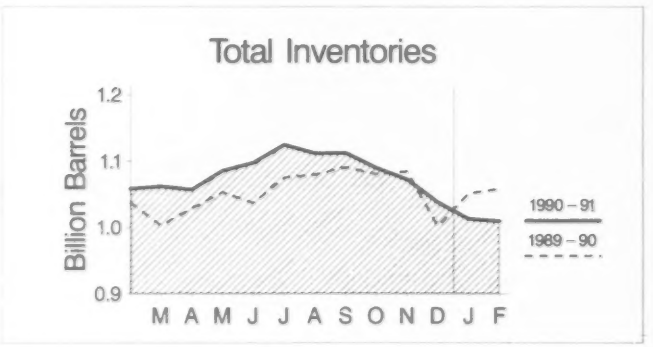
PROLONGED DRAW MODERATES. The substantial decline in total inventories that had been taking place since the end of July—amounting to over 100 million barrels—showed signs of levelling off in February. Stocks declined only about 3 million barrels or about 120 thousand B/D, versus an average 600 thousand B/D during the previous six months. The typical stock draw for February in recent years has been about 20 million barrels.

Crude oil stocks rose by 5 million barrels to 333 million barrels, still towards the lower end of the range for that month in recent years but more than 30 million barrels above the estimated minimum operating level. Inventories of the major products, as well, each remained roughly 15 to 20 million barrels above their estimated minimum operating levels.

Gasoline inventories, declining 2 million barrels to 223 million barrels, reversed the small increases of the previous two months. Distillate stocks, already at lower-than-typical levels at the end of January, declined only 7 million barrels in February or less than half the recent-year average for the month. Instead, a greater share of supply came from current refinery output. With the end of the heating season approaching, month-end stocks stood at 103 million barrels, down 9 million barrels from a year ago but close to 20 million barrels above estimated minimum operating levels.







1/ Total supply, i.e., production plus imports adjusted for net stock change is equal to total products supplied from primary storage. Total products supplied from primary storage less exports is equal to total domestic products supplied. Information contained in this report is derived from information published in the API Weekly Bulletin and is based on historical analysis of the industry. All data reflect the most current information available to the API and include all previously published revisions.

2/ Includes lease condensate.

3/ API data do not include crude oil imported for the Strategic Petroleum Reserve (SPR) nor crude oil stocks held in the SPR (according to the U.S. Department of Energy, the SPR held approximately 582 million barrels as of February 28, 1991).

ESTIMATED UNITED STATES PETROLEUM BALANCE
(Daily Average in Thousands of 42 Gallon barrels)

Products Supplied/Supply From Primary Storage	FEBRUARY			YEAR-TO-DATE		
	1991[1]	1990[2]	% Change	1991[3R]	1990[2]	% Change
Products Supplied:						
Total motor gasoline	6,772	7,129	(5.0)	6,723	6,891	(2.4)
Finished leaded motor gasoline/*	262	472	(44.5)	271	436	(37.8)
Finished unleaded motor gasoline/*	6,510	6,657	(2.2)	6,452	6,455	0.0
Naphtha-jet	153	203	(24.6)	163	192	(15.1)
Kerosine-jet	1,349	1,265	6.6	1,315	1,319	(0.3)
Distillate fuel oil	2,986	3,250	(8.1)	3,242	3,212	0.9
Residual fuel oil	1,321	1,424	(7.2)	1,243	1,496	(16.9)
All other oils[4]	3,779	3,945	(4.2)	3,955	3,972	(0.4)
Reclassified[5]	-180	-191	(5.8)	-176	-87	102.3
Total domestic products supplied	16,180	17,025	(5.0)	16,465	16,995	(3.1)
Exports	1,178	822	43.3	1,093	763	43.3
Total products supplied	17,358	17,847	(2.7)	17,558	17,758	(1.1)
Supply:						
Domestic production:						
Crude oil[6]	7,501	7,394	1.4	7,466	7,455	0.1
Natural gas liquids	1,617	1,558	3.8	1,665	1,541	8.0
Other supply[7]	1,142	850	34.4	827	962	(14.0)
Total domestic supply	10,260	9,802	4.7	9,958	9,958	0.0
Imports:						
Crude oil, tota[8]	5,604	5,847	(4.2)	5,604	6,023	(7.0)
Canadian	771	581	32.7	775	591	31.1
Other	4,833	5,266	(8.2)	4,829	5,432	(11.1)
Products, total	1,373	2,447	(43.9)	1,540	2,707	(43.1)
Residual fuel oil	446	640	(30.3)	407	729	(44.2)
Other	927	1,807	(48.7)	1,133	1,978	(42.7)
Total imports	6,977	8,294	(15.9)	7,144	8,730	(18.2)
Total supply	17,237	18,096	(4.7)	17,102	18,688	(8.5)
Stock change, all oils	-121	249	*****	-456	930	*****
Refinery Operations						
Input to crude oil distillation units	13,210	13,653	(3.2)	12,978	13,640	(4.9)
Operable capacity	15,654	15,540	0.7	15,654	15,536	0.8
Refinery utilization (%)[9]	84.4	87.9	(4.0)	82.9	87.8	(5.6)
Crude oil runs	13,052	13,494	(3.3)	12,801	13,496	(5.1)

Stocks (millions bbls.)	1991		1990[2]	% Change from	
	Feb. 28[10]	Jan. 31[10]	Feb. 28	Previous Month	Year Ago
Crude oil[8]	333.3	328.0	343.1	1.6	(2.9)
Unfinished oils	102.9	100.2	106.5	2.7	(3.4)
Total motor gasoline/**	222.6	224.7	245.7	(0.9)	(9.4)
Finished leaded motor gasoline/*	9.2	9.7	15.4	(5.2)	(40.3)
Finished unleaded motor gasoline/*	172.6	176.5	185.9	(2.2)	(7.2)
Naphtha-jet	5.9	5.7	6.3	3.5	(6.3)
Kerosine-jet	42.6	44.6	40.1	(4.5)	6.2
Distillate fuel oil	103.3	110.7	112.2	(6.7)	(7.9)
Residual fuel oil	46.0	48.3	51.5	(4.8)	(10.7)
All other oils	152.7	150.5R	152.6	1.5	0.1
Total all oils	1,009.3	1,012.7R	1,058.0	(0.3)	(4.6)

/1 Based on API estimated data converted to a monthly basis.
/2 Source: U.S. Department of Energy.
/3 Source: API.
/4 Includes crude losses.
/5 Beginning with January 1981, U.S. Department of Energy began using a new data collection system which encompasses a method to ascertain the amount of product reclassified during the production phase. So that there will be no double counting of these volumes, they are subtracted from the total domestic products supplied.
/6 API estimate; includes lease condensate.
/7 Includes Unaccounted-for crude oil, Processing gain and Field Production of other hydrocarbons and alcohol.
/8 Data do not include oil imported for the Strategic Petroleum Reserve (SPR) nor crude oil stocks held in the SPR.
/9 Represents "Input to crude oil distillation units" as a percent of "Operable capacity".
/10 Derived by interpolating API weekly stocks data.
/R Revised.
/* Included in motor gasoline.
/** Includes finished leaded, finished unleaded, and motor gasoline blending components stocks.

A2575-2

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Monthly Statistical Report

Prepared by the Finance, Accounting, and Statistics Department

Vol. 15, No.3

APRIL 17, 1991

MARCH 1991

SUMMARY

In this year's first quarter, domestic crude oil production experienced its first year-to-year quarterly increase in five years, while deliveries declined—resulting in a significant drop in the need for imports. Though the underlying trend in imports requirements is estimated to have fallen by perhaps only a third of the 1.5 million B/D, 17.2 percent drop actually experienced, this was still a notable departure from the average increases of about 750 thousand B/D per year of the late 1980s. The remainder of the first quarter's import decline was largely due to differences in inventory behavior between last year and this.

The 1.2 percent, nearly 90 thousand B/D rise in domestic crude oil production was the result of a 4.6 percent increase in Alaska, combined with flat output levels in the lower 48. Enhancements to North Slope production facilities over the past year, combined with an accelerated well-fracturing program, account for Alaska's increase. In the lower 48, increased servicing of existing wells in the latter part of 1990 along with modest gains in drilling helped to moderate the decline trend of the previous five years, which had averaged about 5 percent per year.

Meanwhile, though March deliveries roughly matched those of a year ago, they counterbalanced unusually weak deliveries in the prior month, and the underlying trend in consumption is still believed to be declining. For the quarter as a whole, deliveries' 1.7 percent decrease would have been even larger had it not been influenced by weather considerations. Though the quarter averaged about 10 percent warmer than normal, the year-ago period was warmer still.

Without this transitory influence on demand for heating fuels, we estimate that deliveries for the first three months of this year would have declined about 2.5 percent—roughly in line with the estimated weather-adjusted decline in consumption for the previous quarter. Thus, though retail prices have dropped considerably over the past several months, weakness in the economy apparently continued to dampen petroleum demand during the first quarter.

Refining activity in early 1991 reflected the weakness in domestic demand, with input to distillation units falling 0.7 percent for March and 3.1 percent for the quarter as a whole. With the reduced demand and increased supply in world markets following the Persian Gulf cease-fire, kerosine jet fuel production dropped off noticeably in March, falling by nearly 5 percent versus a year ago.

Total inventories fell 32 million barrels in March, about twice the typical amount and in marked contrast to the unusually large build early last year. Though product stocks remained at the low end of their historical range, crude oil stocks rose to near the middle of their typical 330-350 million barrel range of recent years. Crude oil stocks had previously been drawn down by nearly 65 million barrels between the end of last June and January of this year, when they had reached a recent-year low of 320 million barrels. Gasoline stocks fell 13 million barrels during March—in line with the typical seasonal decline for the month, though month-end levels were at the low end of their historical range.

PRODUCT SUPPLIED [1/]

Gasoline

DELIVERIES STILL FALLING. Though less than February's unusually steep decline, gasoline deliveries' drop in March still amounted to 1.2 percent and brought the decline for the quarter as a whole to 2.1 percent. This was roughly in agreement with estimated trends in travel. The 2.2 percent drop in highway travel for January, the latest data available, likely overstates the decline trend for that series, since travel a year ago had been bolstered by mild winter weather and months immediately prior to January had been showing marginal increases. Nevertheless, it is quite possible that when data for the quarter as a whole become available, a flat to declining trend may be evident for miles traveled. Because of continued gains in average fuel efficiency, this would translate into a decline in gasoline consumption roughly in line with the first quarter's deliveries decline.

With retail prices at or near year-ago levels for the past two months, the continued erosion of gasoline deliveries appears increasingly attributable to the state of the economy rather than to the lagged effect of previous months' higher prices. March's prices, even without adjustment for inflation, were about equal to those one year earlier, despite the rise in Federal excise taxes of about 5 cents and additional increases enacted by a number of states.

	API ESTIMATES MARCH		YEAR-TO-DATE	
	Million B/D	Percent Change	Million B/D	Percent Change
Total domestic deliveries	17.1	0.2	16.7	(1.7)
Crude production[2/]	7.6	2.8	7.5	1.2
Total imports[3/]	6.9	(12.2)	7.0	(17.2)
Stocks (million bbl)[4/]	967	(8.9)	na	na

Certainly, the effect of last fall's higher prices on grade switching appears to be diminishing. Unleaded premium, which has typically averaged 18-19 cents per gallon higher than unleaded regular over the past year, had held a 22-23 percent market share in the first part of last year. This quickly shrank to around 16 percent by the time retail prices peaked near the end of the year. By January, premium's share had regained a point or so, and though Department of Energy data are not yet available for more recent months, past market responses to retail price fluctuations suggest that its share may have been approaching 20 percent by March.

Distillates

WEAK DIESEL DEMAND CONTRIBUTES TO DECREASE.

Distillate deliveries fell 3.8 percent for the month and 2.0 percent for the quarter—though the quarter's decline would have been steeper had the weather not been about 10 percent colder than the unusually warm first quarter of 1990. On a weather-adjusted basis, the first quarter drop would have been about 3.5 percent, or a little over 100 thousand B/D.

One major component of that decline is the drop in highway diesel sales, which have slowed in recent months, due primarily to economic factors. Growing at about a 2 percent annual rate prior to the invasion of Kuwait last August, diesel sales are estimated to have declined by about 2-3 percent during the first quarter.

On an annual basis, sales of highway diesel typically account for 40-45 percent of the distillate market. However, this share of the total varies from season to season, ranging from less than a third during some winter months to more than a half during peak summer months. Although this seasonality is mostly due to the winter-peaking nature of heating fuel, it is also the result of the summer-peaking nature of highway diesel—which also serves to moderate the seasonal swings in overall distillate deliveries patterns. Between 1984 and 1989, diesel sales during August were, on average, about 30 percent higher than during January, although seasonal differences in sales are likely more pronounced than in deliveries. Historically, March has been a transitional month, as heating fuel sales drop off and highway diesel sales pick up.

Residual Fuel Oil

PREVIOUS DECLINE FLATTENS IN MARCH.

Despite moderate weather, sluggish electricity demand, and weak conditions in bunker fuel markets, the persistent decline in residual fuel deliveries flattened during March. March's 2.4 percent growth in residual fuel supplied, though partly the result of comparison against weak deliveries a year ago, was a continuation of improvement seen during February. The decline of 12.2 percent (nearly 170 thousand B/D) during the first quarter compares with a 22 percent drop during the last four months of 1990.

Nationwide, weather for March was slightly colder than a year ago. However, in the resid-intense East, temperatures were about 5 percent warmer than last year and about 10 percent warmer than normal. Accompanying the moderate weather in the East was a slight decline in electricity generation there.

More important than weather in explaining changes in resid deliveries over time has been price movement. Because residual fuel competes directly with natural gas (via dual-fired generation) and, to a lesser extent, with coal and nuclear (through utility capacity management and bulk power transfers), resid consumption was hard hit following the Iraqi invasion of Kuwait last August, and the ensuing increase in prices. Between the first of August and the first of January, resid prices rose nearly 30 percent more rapidly than natural gas prices. The change in relative prices was enough to reverse growth in resid deliveries, which, between May and August, had grown by 7.7 percent. However, in recent months, relative price movements have been in the opposite direction. As a result, natural gas prices were about the same at the end of March as the beginning of August, while resid prices were about 10% cheaper.

While no timely data are available on bunker fuel demand, historical figures show a significant correlation between bunker demand and the level of petroleum imports. By weight, petroleum imports have accounted for roughly two thirds of all ocean-borne U.S. imports. With petroleum imports down by nearly a million barrels a day (or 12.2 percent) in March versus a year ago, it is believed that demand for resid as bunker fuel was also weak, although buoyed by relatively strong U.S. exports, particularly capital goods.

Kerosine Jet Fuel

ONLY MAJOR PRODUCT TO INCREASE IN FIRST QUARTER.

Lower prices and recovering air travel contributed to jet fuel's 3.8 percent deliveries' increase during March. Jet fuel supplied has grown by about 5.3 percent over the past two months after declining nearly 7 percent during the previous two. For the first quarter, deliveries were up by about 3.2 percent.

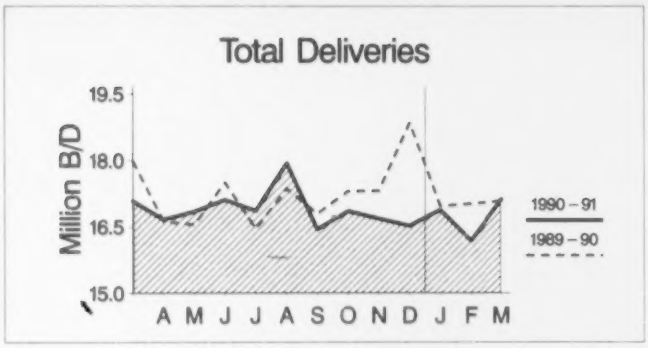
February's cease-fire in the Gulf, coupled with major air fare discounts and incentives, reportedly sparked a return to airline ticket windows by business and leisure travelers during March. However, traffic losses seen in January and February were most likely moderated, rather than reversed, during March. Aircraft miles had been growing by about 5 percent prior to the war, but declined in February by nearly 6 percent. International travel, particularly trans-Atlantic, was hit hard, as double digit growth at the end of 1990 gave way to double digit declines in February. Early reports for March, however, indicate improvement, but with depressed load factors in February and a lag between passenger bookings and passenger travel, March likely brought a bigger increase in passenger travel than in aircraft miles, which we estimate to have been about flat for the month.

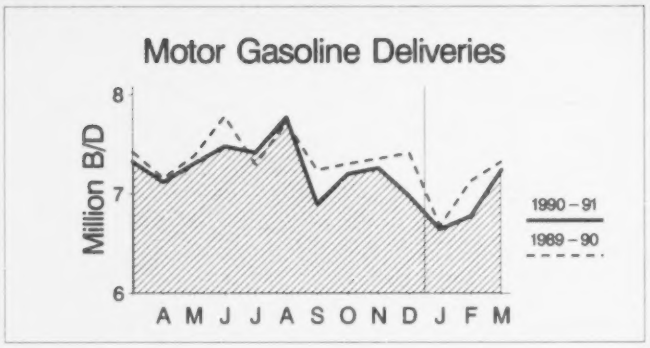
The sharp increases in jet fuel prices last fall were widely reported but, the degree by which prices have fallen over the past five months is equally noteworthy. By the end of March, jet fuel prices in the U.S. had come down by over 60 percent from their October peaks, and while crude prices were about the same at the end of March as the end of July, jet fuel prices were actually 3-5 cents/gallon cheaper.

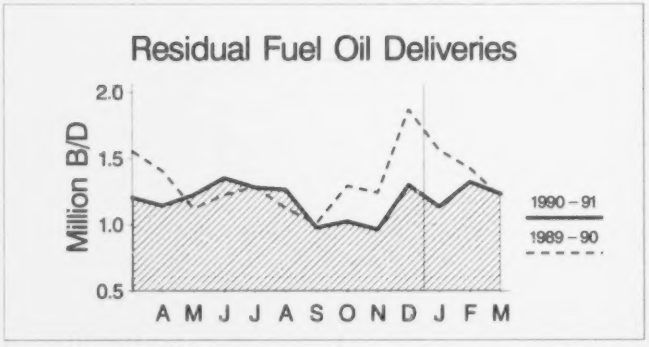
Other Oils

UP VERSUS WEAK LEVELS A YEAR AGO.

For the quarter, deliveries of "other oils" rose 3.3 percent, mostly because of weak deliveries a year earlier. Extremely warm weather at that time depressed heating demand for propane, at a time when sales of ethane for petrochemical use were also slack. Petrochemical feedstock demand has also risen since then, both for ethane and for heavier feedstocks. But, compared with deliveries of "other oils" in more recent quarters, and adjusting for normal seasonal patterns, deliveries for the quarter were essentially flat.







SUPPLY [1/]

Production

FIRST QUARTERLY RISE SINCE 1986. During the first quarter, for the first time in five years for a similar period, quarterly crude oil production rose year to year. The increase amounted to 1.2 percent or nearly 90 thousand B/D. Lower 48 production was essentially flat for the quarter—in contrast with the average 5 percent per year drop experienced in the latter half of the 1980s. In Alaska, production rose 4.6 percent as the effects of facilities enhancements and accelerated well fracturing continued to be evident.

Drilling activity made another modest gain in the first quarter as well. Total completions were up an estimated 4 percent, year to year, following a 5 percent increase for all of 1990, according to API's most recent estimates. The first quarter rise was entirely due to an estimated 18 percent increase for oil well completions; natural gas completions were estimated to have declined slightly, and dry holes, by about 8 percent.

In exploratory drilling, the pattern was similar. Exploratory natural gas completions fell roughly 15 percent, while oil well completions were up close to 20 percent for the first quarter—roughly matching the estimated gain for last year's fourth quarter. Recent overall drilling levels, however, have still been well below levels experienced in the 1980s. In 1981, total completions had reached nearly 90,000, slipping to about 71,000 in 1985 before collapsing in subsequent years to a low of less than 28,000 in 1989. The first quarter's results imply an annual rate of completions of around 30,000.

Imports

TRENDS IN OUTPUT AND DELIVERIES LOWER IMPORTS. Total imports fell 17.2 percent or nearly 1.5 million B/D for the first quarter. Though rising inventories in the year ago period and a decline for this year's first quarter account for a substantial portion of the drop, recent trends in consumption and domestic production also played a significant role, reducing underlying requirements for imports by an estimated half million B/D compared with a year ago. The record draw of about 420 thousand B/D of crude from the Strategic Petroleum Reserve during March also temporarily displaced some imports.

For March, crude oil imports fell 14.5 percent versus a year ago, their eighth consecutive monthly decline. Likewise, product imports also fell; however, growing resid imports and moderating declines in gasoline and distillate imports kept the product drop to 4.7 percent—small by standards of recent months.

The moderating drop in product imports for the month compares with declines of over 40 percent in each of January and February. Much of this apparent shift was simply the result of contrasting import behavior a year ago, when January product imports were considerably above trend and March product imports considerably below. Still, even after adjusting for this, the decline in product imports moderated from the extreme drops in February. Distillate and motor gasoline imports, both down in excess of 60 percent during February, fell 1 and 2 percent, respectively, in March. Furthermore, resid imports, down 34 percent a month ago, actually increased by 14 percent in March. If compared against the trend a year ago, we estimate that total product imports would have declined 10-15 percent.

For crude oil imports, the decline over the past half-year has not been distributed evenly among supplying countries. Surprisingly, during the first six months following the Iraqi invasion, African crude imports into the U.S. fell more dramatically than imports from Persian Gulf nations, as some Nigerian and Angolan crudes headed to European markets. U.S. crude imports from African nations fell an average of 395 thousand B/D during this period versus the first seven months of 1990. Incremental imports averaging 280 thousand B/D from Saudi Arabia, 110 thousand B/D from Western Hemisphere suppliers, and nearly 40 thousand B/D from Malaysia compensated for a portion of the large drop in crudes which had been coming from Iraq, Kuwait, Nigeria and Angola.

Refinery Operations

WEAK DEMAND CUTS REFINERY OPERATIONS.

The weak demand for petroleum products has been readily apparent in refinery activity so far this year. Input to distillation units fell 0.7 percent for March and 3.1 percent for the quarter as a whole. With the reduced military demand for jet fuel and increased availability on world markets following the Persian Gulf cease-fire, kerosine jet fuel production fell from its 1.3-1.4 million B/D range of the past several months to less than 1.2 million B/D in March. Year to year, the dropoff for kerosine jet fuel output amounted to 4.7 percent. Gasoline output rose 0.9 percent, while distillate fuel oil production jumped 9.2 percent.

Inventories

PRODUCTS DOWN, BUT CRUDE NEAR TYPICAL LEVELS.

Total inventories dropped 32 million barrels during March, about twice the historical average for the month. The continued lower-than-typical month-end stocks, nearly 9 percent lower than a year ago, were mainly a reflection of lower product stocks.

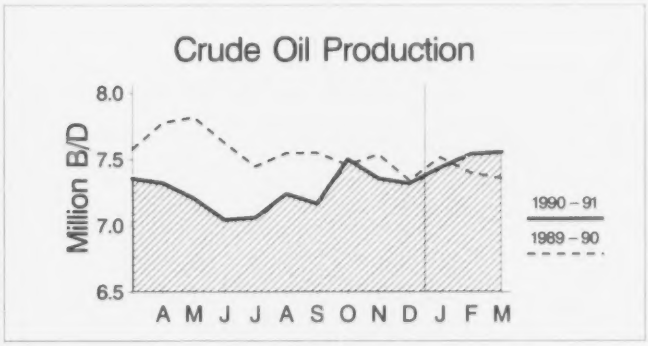
Crude inventories, however, rose 3 million barrels to just below 340 million barrels, near the middle of the typical 330-350 million barrel range of recent years. Crude oil stocks had swung over the past year or so from a recent-year high of 384 million barrels last June to a low of 320 million barrels at the end of January as the draw on domestic stocks compensated for the reduced availability of imported crude following the embargo of Iraqi and Kuwaiti oil last August.

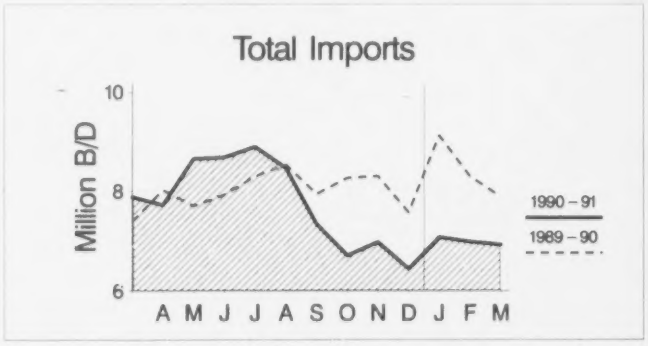
With the heating season essentially over, distillate stocks declined 6 million barrels to 97 million barrels, not out of line with end-of-season levels of recent years. Though gasoline inventory levels at month-end were at the low end of their historical range, the 13 million barrel decline for March was fairly typical for this time of year.

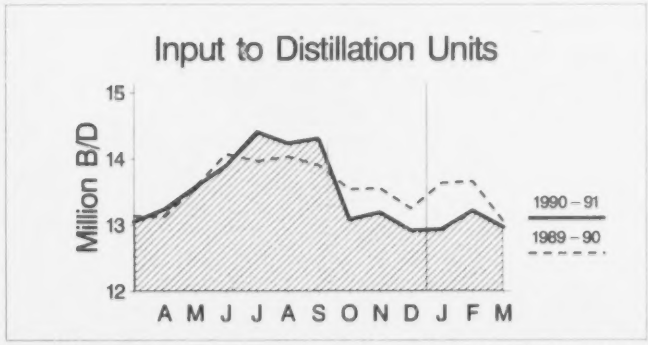
In fact, gasoline inventories have not usually followed the seasonal pattern that some frequently assume—that is, stocks rising in anticipation of the peak summer demand period and then being drawn down substantially over the summer. Though the period of highest gasoline deliveries is June through August, gasoline inventories typically peak in January or February. The largest stock build, running 15 to 20 million barrels, occurs in January, when gasoline demand is the weakest but refinery activity is reasonably strong because of efforts to meet heating-related demands.

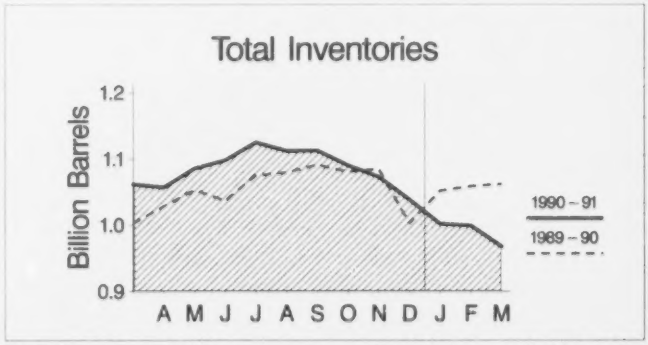
Furthermore, during the spring, rather than rising, gasoline inventories have usually declined—over the previous five seasons, by an average of about 25 million barrels between February and June. The need to clear the system to make room for summer-grade fuel—currently required by federal regulations to be at terminals by May 1 and at service stations by June 1—contributes to the drop.

Finally, over the peak driving season, industry gasoline stocks have averaged only about a 5 million barrel decline, supplying at most about one percent of deliveries. Instead, the seasonal increase in deliveries (about 4 percent above the annual average) has typically been met from higher refinery production rather than from large inventory draws.









1/ Total supply, i.e., production plus imports adjusted for net stock change is equal to total products supplied from primary storage. Total products supplied from primary storage less exports is equal to total domestic products supplied. Information contained in this report is derived from information published in the API Weekly Bulletin and is based on historical analysis of the industry. All data reflect the most current information available to the API and include all previously published revisions.

2/ Includes lease condensate.

3/ API data do not include crude oil imported for the Strategic Petroleum Reserve (SPR) nor crude oil stocks held in the SPR (according to the U.S. Department of Energy, the SPR held approximately 569 million barrels as of March 31, 1991).

ESTIMATED UNITED STATES PETROLEUM BALANCE
(Daily Average in Thousands of 42 Gallon barrels)

Products Supplied/Supply From Primary Storage	MARCH			YEAR-TO-DATE		
	1991[1]	1990[2]	% Change	1991[3R]	1990[2]	% Change
Products Supplied:						
Total motor gasoline	7,240	7,325	(1.2)	6,889	7,040	(2.1)
Finished leaded motor gasoline/*	264	443	(40.4)	269	439	(38.7)
Finished unleaded motor gasoline/*	6,976	6,882	1.4	6,620	6,601	0.3
Naphtha-jet	160	165	(3.0)	165	183	(9.8)
Kerosine-jet	1,305	1,257	3.8	1,340	1,298	3.2
Distillate fuel oil	3,140	3,265	(3.8)	3,167	3,230	(2.0)
Residual fuel oil	1,231	1,202	2.4	1,225	1,395	(12.2)
All other oils[4]	4,175	4,015	4.0	4,119	3,986	3.3
Reclassified[5]	-135	-146	(7.5)	-161	-107	50.5
Total domestic products supplied	17,116	17,083	0.2	16,744	17,025	(1.7)
Exports	1,182	881	34.2	1,187	804	47.6
Total products supplied	18,298	17,964	1.9	17,931	17,829	0.6
Supply:						
Domestic production:						
Crude oil[6]	7,552	7,347	2.8	7,507	7,418	1.2
Natural gas liquids	1,612	1,519	6.1	1,621	1,533	5.7
Other supply[7]	1,192	1,319	(9.6)	1,042	1,085	(4.0)
Total domestic supply	10,356	10,185	1.7	10,170	10,036	1.3
Imports:						
Crude oil, total[8]	5,201	6,081	(14.5)	5,361	6,043	(11.3)
Canadian	736	576	27.8	742	586	26.6
Other	4,465	5,505	(18.9)	4,619	5,457	(15.4)
Products, total	1,716	1,800	(4.7)	1,626	2,395	(32.1)
Residual fuel oil	382	334	14.4	416	593	(29.8)
Other	1,334	1,466	(9.0)	1,210	1,802	(32.9)
Total imports	6,917	7,881	(12.2)	6,987	8,438	(17.2)
Total supply	17,273	18,066	(4.4)	17,157	18,474	(7.1)
Stock change, all oils	-1,025	102	******	-774	645	******
Refinery Operations						
Input to crude oil distillation units	12,958	13,047	(0.7)	13,026	13,436	(3.1)
Operable capacity	15,654	15,498	1.0	15,660	15,523	0.9
Refinery utilization (%)[9]	82.8	84.2	(1.7)	83.2	86.6	(3.9)
Crude oil runs	12,877	12,876	0.0)	12,880	13,283	(3.0)

Stocks (millions bbls.)	1991		1990[2]	% Change from	
	Mar. 31[10]	Feb. 28[10]	Mar. 31	Previous Month	Year Ago
Crude oil[8]	339.3	336.1R	373.7	1.0	(9.2)
Unfinished oils	107.1	102.9	109.8	4.1	(2.5)
Total motor gasoline/**	209.3	222.6	228.2	(6.0)	(8.3)
Finished leaded motor gasoline/*	7.9	9.2	13.6	(14.1)	(41.9)
Finished unleaded motor gasoline/*	162.8	172.6	172.5	(5.7)	(5.6)
Naphtha-jet	5.8	5.9	7.1	(1.7)	(18.3)
Kerosine-jet	38.8	42.6	41.9	(8.9)	(7.4)
Distillate fuel oil	97.4	103.3	99.7	(5.7)	(2.3)
Residual fuel oil	43.8	46.0	46.2	(4.8)	(5.2)
All other oils	125.2	139.0R	154.6	(9.9)	(19.0)
Total all oils	966.7	998.4R	1,061.2	(3.2)	(8.9)

/1 Based on API estimated data converted to a monthly basis.
/2 Source: U.S. Department of Energy.
/3 January, U.S. DOE, February-March, API.
/4 Includes crude losses.
/5 Beginning with January 1981, U.S. Department of Energy began using a new data collection system which encompasses a method to ascertain the amount of product reclassified during the production phase. So that there will be no double counting of these volumes, they are subtracted from the total domestic products supplied.
/6 API estimate; includes lease condensate.
/7 Includes Unaccounted-for crude oil, which reflect withdrawals from the SPR when they occur, processing gain, and Field Production of other of hydrocarbons and alcohol.
/8 Data do not include oil imported for the Strategic Petroleum Reserve (SPR) nor crude oil stocks held in the SPR.
/9 Represents "Input to crude oil distillation units" as a percent of "Operable capacity".
/10 Derived by interpolating API weekly stocks data.
/R Revised.
/* Included in motor gasoline.
/** Includes finished leaded, finished unleaded, and motor gasoline blending components stocks.

A2575-2

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Monthly Statistical Report

Prepared by the Finance, Accounting, and Statistics Department

Vol. 15, No. 4

MAY 15, 1991

APRIL 1991

SUMMARY

Contrasting with relatively flat performance in March, April's total deliveries resumed the pattern of year-to-year declines evident since last September. The month's drop of 3.3 percent reflected declines for all major products except gasoline. Even that product's marginal, 0.4 percent increase was most likely not paralleled by a gain in actual consumption, which we believe continued to decline in April. For deliveries as a whole, the month's decrease corresponded reasonably closely with the 2 to 3 percent decline trend estimated for underlying consumption.

April's product imports, for the first time since last July, reached 2 million B/D. With the improving availability of products over the last month or two with respect to at least some of the problems that had hindered international product trade—the lack of product exports from Kuwait following last August's invasion, a surge in military demand related to the Persian Gulf crisis, strong weather-related demand in Europe early in 1991, and temporary interruptions in supplies from Latin American refineries—product imports in April were essentially equal to those of a year ago. This contrasts with an average year-to-year decline between September and March of 24 percent or more than half a million B/D.

Total imports, though still down about 4 percent versus a year ago in April, reached their highest level since last August. This was largely the reflection of a shift in domestic inventory patterns rather than in underlying consumption or production trends. After a decline in total inventories of nearly 165 million barrels between last August and March, higher imports allowed total inventories to rise 17 million barrels in April.

Month-end gasoline stocks of 204 million barrels were at the bottom of their recent historical range, the result of the combination of diminished availability of product imports earlier in the year and the need to clear the distribution system for government-mandated summer grades before May 1. Crude oil stocks, however, at 340 million barrels, remained near the middle of their recent historical range. Utilization of reported refining capacity averaged 84.5 percent for April, essentially identical with the 84-85 percent levels observed in April for recent prior years—despite this year's decline in demand.

Domestic crude oil production again rose year to year in April, though, in part because of a slight decline in Alaskan output, the increase amounted to only about 0.6 percent or 40 thousand B/D. In the first quarter, domestic production had risen about 1 percent—the first year-to-year increase for a similar period in five years.

PRODUCT SUPPLIED [1]

Gasoline

DELIVERIES RISE BUT CONSUMPTION LIKELY DECLINES.

In contrast to the declines of recent prior months, gasoline deliveries increased slightly in April. However, for a number of reasons, the marginal 0.4 percent rise most likely overstated the strength of underlying consumption, which we believe continued to be down. April's retail prices, up slightly from March, were still lower than they had been for much of the prior eight months. But it is highly unlikely, with the current feeble economy, that the weakness in gasoline deliveries—whose year-to-year declines had been uninterrupted for the previous seven months—was abruptly reversed.

Gasoline deliveries were already slipping, even before the economy began to weaken in the latter part of last year. For the first half of 1990, gasoline deliveries had fallen about 1 percent when the year-to-year growth in economic activity was still averaging 1.2 percent. By the fourth quarter, gasoline deliveries were falling at a 3 percent rate in response to higher retail prices as well as the weakening economy, which by then was up only half a percent, year to year. (When measured on a quarter-to-quarter, annualized basis, fourth quarter GNP fell 1.6 percent). For this year's first quarter, the annualized, quarter-to-quarter decline in GNP of 2.8 percent works out to a year-to-year falloff in economic activity of about 0.6 percent—and it is unlikely that conditions changed dramatically by April. Thus, despite lower retail prices than for most of the past two quarters, gasoline consumption would still be expected to have declined in April by around 2 percent.

For the month as a whole, retail gasoline prices averaged about 1 cent higher in April than in March, and are up around 6 cents over the last couple of months—slightly less than the increase in crude prices since they reached a low in late February. Normal

	API ESTIMATES APRIL		YEAR-TO-DATE	
	Million B/D	Percent Change	Million B/D	Percent Change
Total domestic deliveries	16.1	(3.3)	16.6	(1.9)
Crude production[2]	7.4	0.6	7.5	0.9
Total imports[3]	7.4	(4.4)	7.1	(14.6)
Stocks (million bbl)[4]	976	(7.6)	na	na

seasonal factors may have also played a part in this, since gasoline prices tend to increase as the summer driving season approaches. Analysis of recent years' data show a typical seasonal difference between winter and summer retail prices of roughly 7 cents per gallon, paralleling increased seasonal demand on refineries to produce gasoline at the expense of other products.

Distillates

DROPS FOR HEATING, TRANSPORTATION CUT CONSUMPTION. April's distillate deliveries dropped nearly 7 percent or over 200 thousand B/D from one year earlier, continuing the pattern of declines evident since last fall. The size of the decline probably overstated the drop in consumption, since for the year-to-date, the drop in deliveries has amounted to closer to 3 to 4 percent on a weather-adjusted basis.

The month's weather, though roughly 15 percent warmer than a year ago, explains perhaps only about 50 thousand B/D of the decline since, by April, the seasonal peak in heating-related consumption is well past. Declines in transportation activity contributed to lower demand for diesel fuel, both for on-highway and railroad uses. Highway demand for diesel is estimated to have fallen by about 2 percent during the month, with railroad demand falling more in the 7-9 percent range.

Railroad use of diesel, which accounts for approximately 7 percent of annual distillate fuel use, is particularly sensitive to conditions in mining and industrial sectors, which are subject to wider swings than the economy in general. Railroad car loadings of motor vehicles and parts dropped about 15 percent during the month, while loadings of coal (nearly two-fifths of all car loadings), dropped by about 10 percent.

Residual Fuel Oil

DECLINE MODERATING. Residual fuel deliveries fell in April for the seventh time in eight months. However, the 3.5 percent decline for the month, coupled with the modest growth during March, indicates a moderation in the underlying rate of decline. Temperate weather in the Northeast (where over half of the nation's resid-fired electricity generation takes place) worked against demand during April. However, that was balanced by below-trend deliveries a year ago, which kept the decline from being larger. Adjusting for these factors, we estimate underlying consumption declines to be in the 6-7 percent range.

Weather was the primary factor at work during April, as temperatures in New England and the Mid-Atlantic states fell 15 percent from already moderate temperatures a year ago. While the milder weather helped to bring total electricity output in these states down by about one percent, it likely had a more significant effect on resid-fired generation than on total generation.

Resid-fired electricity capacity is often used for meeting peak demand. While it accounts for about 15 percent of total generation in the Northeast on an annual basis (and about 4 percent nationwide), it makes up considerably more of the incremental output when weather gets extremely hot or cold. Consider, for example, the severe winter of 1989. Between November and December of that year, resid-fired generation accounted for about 60 percent of the marginal electricity output in the Northeast (and 22 percent of the surge output nationwide). However, just as its share grows when temperatures approach extremes, its share falls when temperatures moderate. It is therefore believed that resid-fired generation fell by more than the drop in total generation during April.

Resid prices fell during the month, both in absolute terms and relative to natural gas. At month's end, prices vis-a-vis gas were about as competitive as they've been since last July. Still, having gone through a moderate winter, and with moderate spring weather thus far, natural gas supplies are believed plentiful, and the customary seasonal switch from resid to natural gas does not appear to have been significantly deterred by the changing relative prices.

Kerosine Jet Fuel

DELIVERIES DROP SHARPLY. At 1.19 million B/D, April jet fuel deliveries were their lowest in almost two years; the 7.9 percent year-to-year decline for the month was unusually sharp. However, the April decline more likely reflects changing secondary inventories than a fall-off in underlying consumption.

Airline inventories had apparently been built during the first quarter, when growth in jet fuel deliveries had outpaced growth in underlying consumption by 7-8 percent. Over the long run, however, growth in jet fuel consumption tends to track growth in miles flown, although changes in average aircraft efficiency, size, and flight distance have combined to keep growth in jet fuel demand slightly below growth in miles flown. Between 1984 and 1990, jet fuel deliveries grew at an average annual rate of 5.4 percent while the number of miles flown grew by about 6 percent.

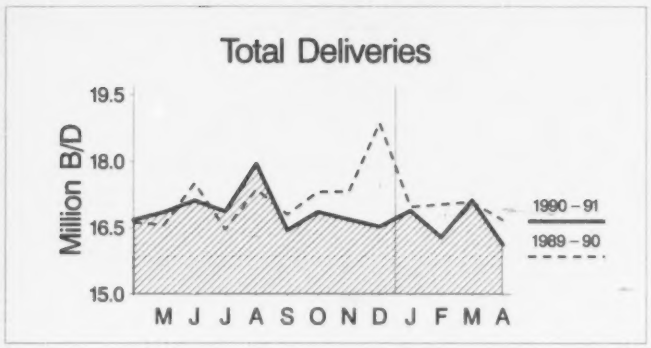
Monthly airline reports show relative improvements in traffic during April, as March's increase in bookings translated into gains in passenger travel. We estimate that, following the 4 percent drop in miles flown during the first quarter (believed, particularly on international routes, to have been more the result of the Persian Gulf conflict than the weak economy), travel in April was about the same as in that month a year ago.

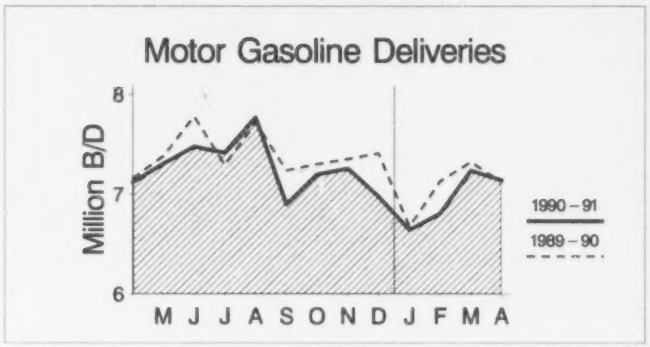
However, while war was the primary reason behind the dramatic drops in passenger travel during the first quarter, it is unlikely to have been the major reason behind weakness in air freight. This segment of the market, which accounts for about a quarter of ton-miles, had already shown signs of weakening even before the outbreak of hostilities in January. Cargo ton-miles had grown by an average annual rate of 11 percent from 1985 to 1989. In 1990, however, air cargo growth dropped to only about 2 percent, and declined moderately during the first four months of 1991, likely the result of economic conditions.

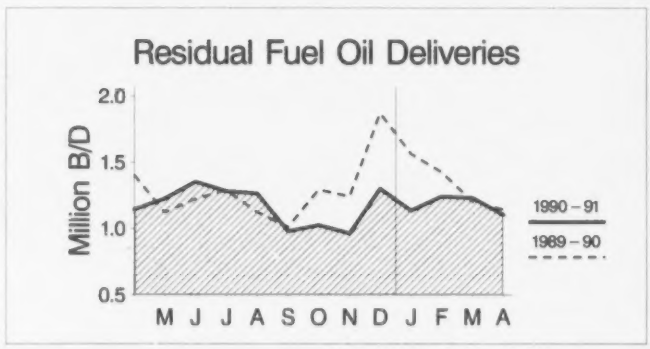
Other Oils

PRIOR MONTH'S RISE REVERSED. Reversing the prior month's increase, deliveries of "other oils" dropped 2.7 percent in April —though the underlying trend, we believe, continues to be flat.

The fact that deliveries of "other oils" have not paralleled total deliveries over the past year or two contrasts with longer-term trends, mainly reflecting gains for petrochemical feedstocks. Last year, total deliveries fell 2.4 percent while deliveries of "other oils" held steady. So far this year, while total deliveries have continued to trend downwards, deliveries of "other oils" rose 2.9 percent—and even if adjusted for unusually weak deliveries in the year-ago period, they would still have been only flat. But over the previous five years, for example, growth in deliveries of "other oils" nearly matched that of total deliveries. Average growth rates, respectively, were 1.1 and 1.2 percent per year.







SUPPLY [1]

Production

YEAR-TO-YEAR INCREASE CONTINUES. Domestic crude oil production continued to show year-to-year gains in April. The increase, however, was less than the first quarter's roughly 1 percent increase—which had been the first year-to-year increase for a similar period in five years. For the lower 48, April production rose 1.0 percent, or a little over 50 thousand B/D versus one year earlier. With a marginal slip in Alaskan output of 0.7 percent, production for the U.S. as a whole rose a little over 40 thousand B/D or 0.6 percent.

Imports

PRODUCT IMPORTS HIGHEST IN NINE MONTHS. Imports in April, at 7.4 million B/D, reached their highest monthly level since last August—though this largely reflected a shift in inventory behavior. A substantial domestic stock draw during August through March had temporarily replaced some imports, while, by contrast, April's higher imports allowed domestic inventories to rise by more than the typical seasonal amount. As a result of these shifts in inventory patterns, the year-to-year declines in imports, which had averaged 17 percent over the prior two quarters, amounted to only about 4 percent in April.

April's overall increase in imports reflected a significant strengthening for products, imports of which reached 2 million B/D for the first time since last July. Following the invasion of Kuwait by Iraq last August, a number of factors had reduced the availability of product imports on world markets: the loss of product output from Kuwait; increased military demand and redirection of Saudi product output to military uses; strong heating-related demand in Europe due to extremely cold weather in late January to mid-February; and, more recently, reduced gasoline availability from Latin America due to refinery downtime in Venezuela and labor unrest in Brazil.

In more recent months, however, Persian gulf military demand has evaporated, Saudi Arabian products are again being offered to world markets, and supplies have again become more readily available from Latin American producers. The year-to-year decline in product imports over September through March had amounted to about 24 percent or more than half a million B/D. For April, product imports were roughly even.

April's imports of finished gasoline rose 95 thousand B/D to 422 thousand B/D, the first year-to-year increase in nearly a year. Distillate imports of 253 thousand B/D, though still off about 55 thousand B/D from a year ago, were within the range that had been typical prior to the events of the last nine months. Kerosine jet fuel imports, reflecting in part April's weak deliveries, were still off by about 30 thousand B/D from a year ago at 71 thousand B/D.

Refinery Operations

ACTIVITY MATCHES YEAR-AGO LEVEL. As is usually the case, refinery activity picked up in April versus the prior month. Input to distillation units averaged 13.2 million B/D, up about 250 thousand B/D from March and, despite weaker demand, nearly equal to that of a year ago.

The month's utilization of reported capacity averaged 84.5 percent—and contrary to some reports, was essentially the same as the 84-85 percent level experienced in April for the last several years. The intensity of refinery activity normally lessens in early

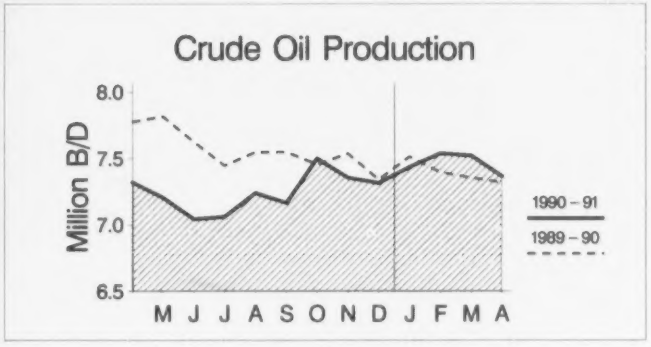
spring because of the need to undertake maintenance and repairs following the higher level of activity during the winter months, and in preparation for the upcoming peak demand period for gasoline. The apparent practical peak utilization rate for reported capacity, observed during the highest demand periods in recent years, has been in the low 90s. For capacity in actual operation (a figure slightly lower than "reported capacity"), April's utilization rate would have been about 88 percent.

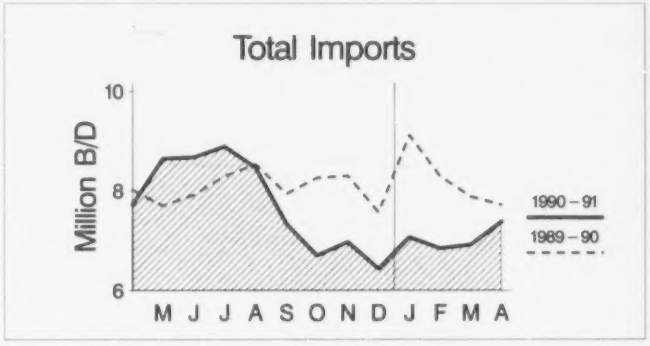
April's gasoline production declined 0.9 percent, year to year, following an increase of similar size for March. Distillate output was flat, while production of kerosine jet fuel and residual fuel oil rose 1.0 percent and 4.0 percent, respectively.

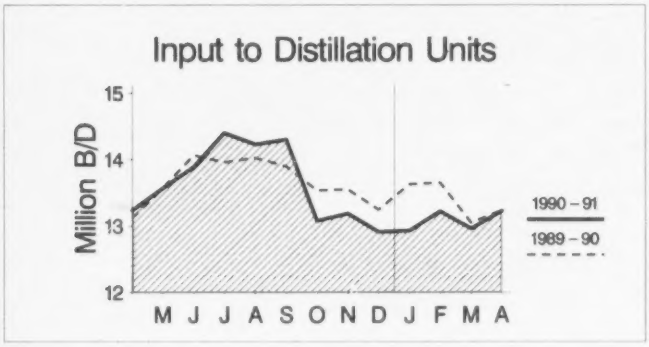
Inventories

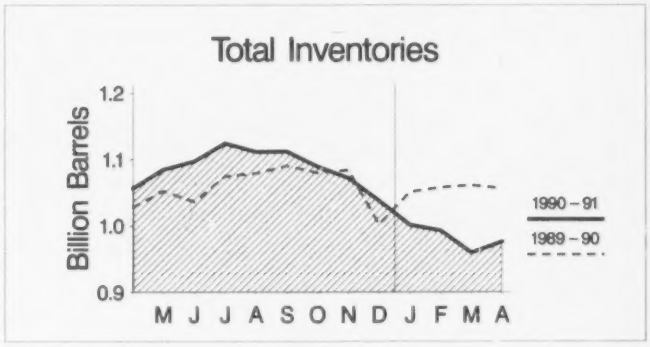
PRIOR DRAWDOWN REVERSES IN APRIL. Reversing the decline trend that had been evident since last August, total inventories rose 17 million barrels during April. From August to March, domestic inventories had been drawn down by nearly 165 million barrels largely to compensate for the reduced availability of imports following the Iraq-Kuwait crisis. At 976 million barrels, they were still 7.6 percent lower than a year ago.

Crude stocks, 340 million barrels at month-end, continued in roughly the middle of their historical range. Gasoline stocks declined 5 million barrels to 204 million barrels, continuing at the bottom of their recent historical range. The reduced availability of imports earlier in the year and the costliness of being caught with winter-grade gasoline—essentially unsalable after the May 1 regulatory deadline—contributed to April's low stock level. Distillate stocks, at 100 million barrels, remained slightly above the typical end-of-season levels of recent years.









1/ Total supply, i.e., production plus imports adjusted for net stock change is equal to total products supplied from primary storage. Total products supplied from primary storage less exports is equal to total domestic products supplied. Information contained in this report is derived from information published in the API Weekly Bulletin and is based on historical analysis of the industry. All data reflect the most current information available to the API and include all previously published revisions.

2/ Includes lease condensate.

3/ API data do not include crude oil imported for the Strategic Petroleum Reserve (SPR) nor crude oil stocks held in the SPR (according to the U.S. Department of Energy, the SPR held approximately 569 million barrels as of April 30, 1991).

ESTIMATED UNITED STATES PETROLEUM BALANCE
(Daily Average in Thousands of 42 Gallon barrels)

Products Supplied/Supply From Primary Storage	APRIL			YEAR-TO-DATE		
	1991[1]	1990[2]	% Change	1991[3R]	1990[2]	% Change
Products Supplied:						
Total motor gasoline	7,142	7,116	0.4	6,960	7,059	(1.4)
Finished leaded motor gasoline/*	260	420	(38.1)	256	434	(41.0)
Finished unleaded motor gasoline/*	6,882	6,696	2.8	6,704	6,625	1.2
Naphtha-jet	170	196	(13.3)	173	186	(7.0)
Kerosine-jet	1,190	1,292	(7.9)	1,301	1,296	0.4
Distillate fuel oil	2,850	3,059	(6.8)	3,091	3,187	(3.0)
Residual fuel oil	1,102	1,142	(3.5)	1,175	1,332	(11.8)
All other oils[4]	3,826	3,934	(2.7)	4,088	3,974	2.9
Reclassified[5]	-168	-73	130.1	-178	-99	79.8
Total domestic products supplied	16,112	16,666	(3.3)	16,610	16,935	(1.9)
Exports	949	761	24.7	1,189	793	49.9
Total products supplied	17,061	17,427	(2.1)	17,799	17,728	0.4
Supply:						
Domestic production:						
Crude oil[6]	7,362	7,318	0.6	7,463	7,393	0.9
Natural gas liquids	1,617	1,481	9.2	1,637	1,520	7.7
Other supply[7]	1,259	752	67.4	1,144	1,002	14.2
Total domestic supply	10,238	9,551	7.2	10,244	9,915	3.3
Imports:						
Crude oil, total[8]	5,378	5,702	(5.7)	5,341	5,958	(10.4)
Canadian	770	611	26.0	774	592	30.7
Other	4,608	5,091	(9.5)	4,567	5,366	(14.9)
Products, total	2,002	2,018	(0.8)	1,713	2,300	(25.5)
Residual fuel oil	404	555	(27.2)	398	583	(31.7)
Other	1,598	1,463	9.2	1,315	1,717	(23.4)
Total imports	7,380	7,720	(4.4)	7,054	8,258	(14.6)
Total supply	17,618	17,271	2.0	17,298	18,173	(4.8)
Stock change, all oils	557	-156	******	-501	445	******
Refinery Operations						
Input to crude oil distillation units	13,222	13,234	(0.1)	13,077	13,385	(2.3)
Operable capacity	15,654	15,496	1.0	15,660	15,516	0.9
Refinery utilization (%)[9]	84.5	85.4	(1.1)	83.5	86.3	(3.2)
Crude oil runs	13,079	13,051	0.2	12,930	13,225	(2.2)

Stocks (millions bbls.)	1991		1990[2]	% Change from	
	Apr. 30[10]	Mar. 31[10]	Apr. 30	Previous Month	Year Ago
Crude oil[8]	339.5	339.3	369.7	0.1	(8.2)
Unfinished oils	112.6	107.1	108.7	5.1	3.6
Total motor gasoline/**	204.3	209.3	223.6	(2.4)	(8.6)
Finished leaded motor gasoline/*	8.1	7.9	12.6	2.5	(35.7)
Finished unleaded motor gasoline/*	159.1	162.8	171.9	(2.3)	(7.4)
Naphtha-jet	5.8	5.8	6.3	0.0	(7.9)
Kerosine-jet	38.0	38.8	40.5	(2.1)	(6.2)
Distillate fuel oil	100.4	97.4	99.5	3.1	0.9
Residual fuel oil	44.0	43.8	49.0	0.5	(10.2)
All other oils	131.6	118.0R	159.2	11.5	(17.3)
Total all oils	976.2	959.5R	1,056.5	1.7	(7.6)

/1 Based on API estimated data converted to a monthly basis.
/2 Source: U.S. Department of Energy.
/3 JANUARY-FEBRUARY, DOE, MARCH-APRIL, API.
/4 Includes crude losses.
/5 Beginning with January 1981, U.S. Department of Energy began using a new data collection system which encompasses a method to ascertain the amount of product reclassified during the production phase. So that there will be no double counting of these volumes, they are subtracted from the total domestic products supplied.
/6 API estimate; includes lease condensate.
/7 Includes Unaccounted-for crude oil, which will reflect withdrawls from the SPR when they occur, processing gain, field production of other hydrocarbons and alcohol.
/8 Data do not include oil imported for the Strategic Petroleum Reserve (SPR) nor crude oil stocks held in the SPR.
/9 Represents "Input to crude oil distillation units" as a percent of "Operable capacity".
/10 Derived by interpolating API weekly stocks data.
/R Revised.
/* Included in motor gasoline.
/** Includes finished leaded, finished unleaded, and motor gasoline blending components stocks.

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Monthly Statistical Report

Prepared by the Finance, Accounting, and Statistics Department

Vol. 15, No.5

JUNE 19, 1991

MAY 1991

SUMMARY

In May, for the ninth straight month, domestic petroleum deliveries declined. The larger-than-usual, nearly 6 percent decrease reflected substantial drops for all major products. Though some recent economic indicators have been positive, the deterioration of the economy over the past two quarters takes time to erase. Thus, even the most optimistic assumptions about economic growth for recent months still indicate a drop in economic activity on a year-to-year basis. In any event, petroleum deliveries for May continued to display the year-to-year weakness that they have for the past several quarters.

Meanwhile, crude oil production rose 2.9 percent in May, entirely the result of a nearly 4 percent, roughly 200 thousand B/D year-to-year increase for the lower 48 states. Alaskan production was about even with a year ago.

May's total imports reached 8 million B/D for the first time since last August, though this was mainly the reflection of the substantial, 46 million barrel build in domestic inventories rather than any marked shift in the underlying trend in imports requirements. The inventory build continued the replenishment of stocks that had been drawn down by 165 million barrels during the Persian Gulf crisis. With weak domestic demand and, at least for the past several months, year-to-year increases in domestic production, underlying imports requirements so far this year have been running more than half a million B/D below those of a year ago.

Refinery activity in May rose 1 percent, its first year-to-year gain since last September. For the year to date, input to distillation units was still down an average 1.5 percent, reflecting this year's weaker demand. Gasoline production in particular was strong in May, though the 7.1 percent increase from last May was exaggerated because of lower-than-typical output a year ago. This, combined with imports of finished gasoline roughly in line with typical levels for May, enabled gasoline stocks to rise 9 million barrels over the month to 214 million barrels, within about 2 percent of those of a year ago.

PRODUCT SUPPLIED [1]

Gasoline

WEAK DELIVERIES CONTINUE. The view that April's slight uptick in deliveries had overstated the strength in underlying consumption gained support from May's deliveries, which dropped 2.5 percent, year to year. With May's decline roughly matching the year-to-date decrease of 2.2 percent, there has as yet been little evidence of any significant shift in gasoline consumption's underlying weakness so far this year. The marginal increases in miles traveled of recent months, when adjusted for fuel efficiency improvements, also suggest continued declines for gasoline consumption.

In part corresponding with the typical pattern during the spring, retail gasoline prices averaged about 5 cents higher in May than in April. However, compared with a year ago, retail prices were up about 10 cents, only a partial reflection of a 6 to 7 cent increase in crude oil prices, a 5 cent increase in Federal excise taxes, plus a number of state tax increases which added about a cent to the national average.

Though vacation travel is commonly cited as the reason for the peaking of gasoline demand during the summer months, this is, in fact, only part of the story. On an annual basis, vacationing only accounts for about 2 percent of travel. Social and recreational travel, however, account for about a third—and the combination of longer daylight hours, warmer weather, and school vacations all provide greater opportunities for travel tied to social and recreational activities in addition to vacation-related trips. Nevertheless, though the seasonal peak in gasoline deliveries is not negligible, typical deliveries for June-August have averaged only about 5-6 percent higher than for the other nine months in recent years.

Distillates

MOST SECTORS INDICATE DECLINE. Deliveries of distillate fuel fell 6.2 percent in May—their seventh decline in eight months. While distillate supplied has been down more than nine percent (or about 220 thousand B/D) over those eight months, the trend down has been closer to 5 percent when adjusted for weather. Factors influencing this trend in consumption were mixed in May; there was likely growth in the utility sector and moderating losses in highway demand, but these are believed to have been offset by

	API ESTIMATES			
	MAY		YEAR-TO-DATE	
	Million B/D	Percent Change	Million B/D	Percent Change
Total domestic deliveries	15.8	(5.9)	16.2	(4.0)
Crude production[2]	7.4	2.9	7.5	1.4
Total imports[3]	8.0	(7.2)	7.2	(13.9)
Stocks (million bbl)[4]	1,051	(3.2)	na	na

sluggish railroad demand and a decline in heating fuel consumption.

Based on trends in truck travel, we estimate that highway diesel demand, which is believed to have fallen by 2-3 percent during the first quarter, fell more moderately in May, perhaps by less than one percent. However, rail demand is believed to have remained weak, with car loadings falling by about 8 percent for the third consecutive month. May's unusually warm weather softened heating fuel demand, but increased consumption by utilities for meeting cooling needs.

Deliveries to electric utilities make up a relatively small, but extremely volatile, piece of the distillate demand picture. Because distillate-fired generation is generally expensive relative to other sources of power, it is used primarily for meeting peak demand, particularly spikes caused by severe weather. Consider, for example, that consumption of distillate fuel by utilities accounted for less than 1 percent of distillate deliveries this past December, but several times that during the severe cold of December 1989. Increased light fuel oil consumption by utilities for meeting peaking electricity demand added perhaps 1-2 percent to total distillate consumption in May.

Residual Fuel Oil

WARM WEATHER SPURS UTILITY USE, BUT TOTAL FALLS.

While resid deliveries fell 9.3 in May, the relatively sharp decline is believed to have resulted more from above-trend deliveries in May a year ago than a further deterioration in the underlying consumption trend relative to recent months. In fact, demand indicators, particularly weather, suggest that declines in underlying consumption likely moderated for the month.

The warmest May in nearly 50 years contributed to surges in electricity output, both in the resid-intensive East and elsewhere. Nationwide, electricity generation was up more than 5 percent for the month, while in the mid-Atlantic region, generation surged by an even greater 8 percent.

Although demand for space cooling came about a month sooner than normal in much of the country, high secondary stocks of resid appear to have positioned utilities to handle part of the resulting demand surge. Throughout the winter, in the midst of declining resid-fired generation, utility resid stocks were particularly high. Given consumption rates at the time, these stocks represented about 3 weeks additional forward supply on April 1 of this year versus the same time last year. With moderate weather in April, it is likely that these secondary stocks were still relatively large at the beginning of May, allowing utilities to increase consumption in May without increasing purchases proportionally.

Resid demand in the shipping sector likely picked up in May as well. Rebounding waterborne petroleum imports are believed to have strengthened demand for resid as a bunker fuel.

Adjusting for weather, for imports and for last May's deliveries, we estimate the underlying trend of decline in resid consumption to be about 6-7 percent for the past two months.

Kerosine Jet Fuel

DELIVERIES DOWN, TRAFFIC RECOVERING.

Jet kerosine deliveries fell sharply in May for the second consecutive month. However, while unusually large, the 12 percent decline came amid signs of a recovery in underlying consumption. Based on monthly traffic reports from major airlines, we estimate that miles flown grew by about 2 percent year to year, the first increase since December. Part of May's drop was explainable by relatively strong deliveries a year ago, while a portion is believed to reflect apparent secondary inventory shifts during this year's first quarter, when deliveries grew nearly 7 percentage points more than did miles flown.

Aircraft miles flown and jet fuel deliveries typically exhibit contrasting seasonality, with miles flown usually peaking late in the summer and jet fuel supplied peaking in December or January. With prices usually slightly higher on average during wintertime, the contrast in seasonal patterns does not appear to result from price-induced winter airline stock builds, but rather, from jet fuel blending with diesel, often done at marketing terminals during the winter to lower the cloud point of highway diesel.

Undiluted #2 fuel typically will form wax crystals in temperatures below 12 degrees Fahrenheit. Blending can reportedly reach 30-40 percent in some northern states, with the mix richer still under extreme weather conditions. At the national level, we estimate that even a 7 percent blendstock could mean 100 thousand B/D of jet fuel demand during the winter.

With mild temperatures and weakening truck travel this past winter, it is likely that less jet fuel was required for diesel blending than was required last year, perhaps freeing up supplies for jet markets. However, while weather conditions may not have warranted increased blending with diesel, price conditions may have. Following early allied air successes in the Persian Gulf War, jet fuel actually sold at a discount to #2 fuel oil in some markets, perhaps encouraging blending with diesel and heating fuel. The amount, if any, of such blending is not known.

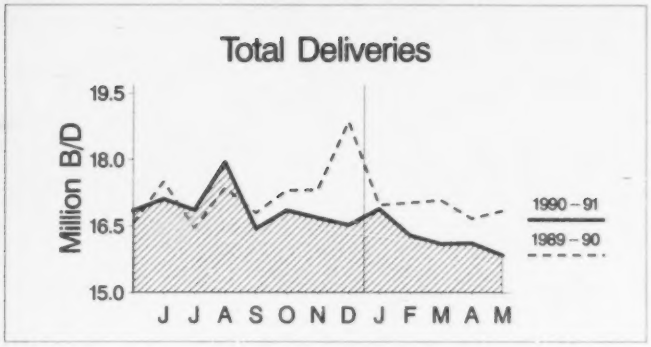
Other Oils

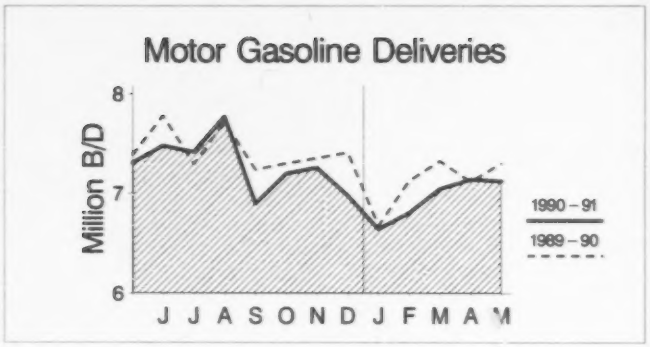
OFF 6 PERCENT DURING MAY.

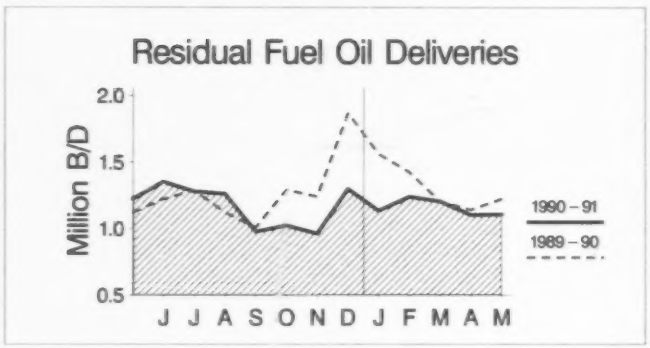
Deliveries of "other oils" dropped a larger-than-usual 6.0 percent for May. This contrasts with the more moderate, roughly 2 percent decline for the year to date, when adjusted for weather.

Petrochemical feedstocks, which account for about a third of the "other oils" category, have been among the products in this group which have felt the effects of the recession over the past several quarters. Petrochemical feedstocks account for roughly 8 percent of domestic product supplied. More than half of these feedstocks, however, are coproducts of natural gas production rather than of crude oil—in the form of ethane (used here to denote ethylene as well), propane, butanes, along with heavier coproducts of gas production. (Nevertheless, once extracted from natural gas streams, these products become part of the "oil" supply/demand balance).

Refineries also account for a significant portion of the supply of petrochemical feedstocks, mainly in the form of naphtha, gasoil, and propane. The choice of feedstocks, though limited to some extent by the flexibility of individual plants, depends not only on their relative costs but on the relative values of the various mixtures of products produced which differ by feedstock. In recent months, for example, gasoil has been a particularly attractive feedstock in relation to the others, based on relative prices of feedstocks and output streams.







SUPPLY [1/]

Production

LOWER 48 CONTINUES TO SHOW GAINS. Domestic crude oil production was up 2.9 percent, or 206 thousand B/D, in May—the largest year-to-year increase in over 5 years. The month's growth resulted entirely from increasing production in the lower 48, where output was up 3.9 percent, reaching a 19 month high. Over the past four months, lower 48 production has averaged about 100 thousand B/D above levels a year ago compared to average declines of about 350 thousand B/D prior to the Iraqi invasion last August. While recent increases outside Alaska reflect the effects of both higher crude prices and increased well completions last year and early this year, May's increase was still surprisingly strong.

In contrast to the lower 48, Alaskan production in May was essentially unchanged from a year ago, and would likely have declined slightly were it not for low production last May (when special projects to increase gas and water handling capability were beginning). Still, even adjusting for this, Alaska's relatively flat performance of the past two months represents an improvement on the roughly 100 thousand B/D decline prior to the facility enhancements.

Drilling activity declined in May, with the number of active rigs at month's end about 16 percent below the same period a year ago. Well servicing activity also fell (for the fifth consecutive month), but was about the same as in May a year ago.

Imports

STOCK-BUILDING BOOSTS IMPORTS. Total imports in May reached a monthly average of over 8 million barrels per day for the first time since last August—though they were still down 7.2 percent from a year ago. The recent month-to-month increases in imports have continued to be more a reflection of a shift towards inventory building than in underlying trends in import needs. If May's inventories had risen by a more typical amount for that time of year, imports of only about 7.3 million B/D would have been needed, down substantially from the 7.9 million B/D that would have been required in the first half of last year if calculated on a similar basis. Weak domestic demand and increased domestic supplies have been responsible for the downward shift.

Product imports, though still down from a year ago, continued to show greater strength than had been apparent early in the year, the result of greater product availability on world markets following the end of the Persian Gulf war. In contrast with a low in February of a little over 1.3 million B/D, product imports in May averaged 1.8 million B/D.

Weaker domestic demand generally kept imports of products below year ago levels by about 20 percent, however. Distillate imports were off 47 thousand B/D to 160 thousand B/D, kerosine jet fuel imports fell by about 37 thousand B/D to 74 thousand B/D, and residual fuel oil imports declined 118 thousand B/D to 389 thousand B/D. Imports of finished gasoline, however, though off by about 116 thousand B/D from last May's strong levels, at 419 thousand B/D were still fairly typical of historical import levels for the month.

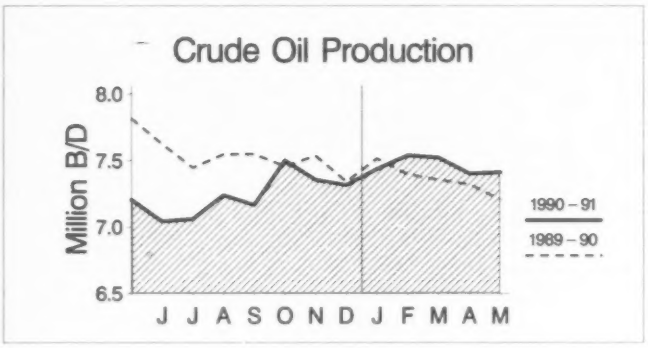
Refinery Operations

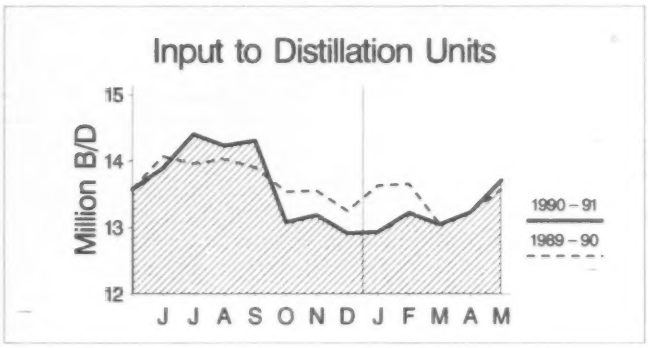
FIRST YEAR-TO-YEAR RISE IN 8 MONTHS. Despite continued weakness in deliveries, May's input to distillation units rose 1 percent, the first year-to-year increase since September. Output of all major products rose, though by varying amounts—the largest percentage increase being for gasoline at over 7 percent. However, about two thirds of this jump was the result of comparison against lower-

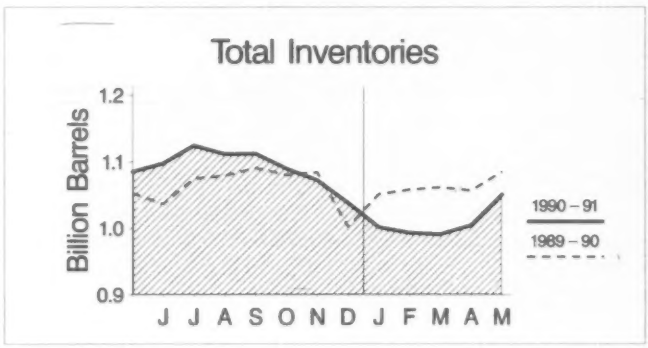
than-typical output a year ago. Distillate output rose 0.8 percent, kerosine jet fuel, 1.9 percent, and residual fuel oil, 6.7 percent. Utilization of reported capacity matched last May's 87.4 percent, while on the basis of capacity in actual operation, utilization exceeded 90 percent, close to the highest observed rate for April in recent years of 91 percent.

Inventories

TOTAL STOCKS JUMP 46 MILLION BARRELS. A substantial build during May replenished total inventories to a level not observed since last November. Rising to 1,050 million barrels, stocks reached a roughly typical level for the end of May. The 45 million barrel rise, which was about twice the recent historical average increase for May, was largely in product stocks, though crude oil inventories also increased by 10 million barrels. Gasoline stocks in particular, which had averaged little change in the previous five Mays, rose 9 million barrels to a month-end level only about 2 percent below a year ago. Distillate stocks rose 7 million barrels to a level 4.4 percent above last May's.







1/ Total supply, i.e., production plus imports adjusted for net stock change is equal to total products supplied from primary storage. Total products supplied from primary storage less exports is equal to total domestic products supplied. Information contained in this report is derived from information published in the API Weekly Bulletin and is based on historical analysis of the industry. All data reflect the most current information available to the API and include all previously published revisions.

2/ Includes lease condensate.

3/ API data do not include crude oil imported for the Strategic Petroleum Reserve (SPR) nor crude oil stocks held in the SPR (according to the U.S. Department of Energy, the SPR held approximately 569 million barrels as of May 31, 1991).

ESTIMATED UNITED STATES PETROLEUM BALANCE
(Daily Average in Thousands of 42 Gallon barrels)

Products Supplied/Supply From Primary Storage	MAY			YEAR-TO-DATE		
	1991[1]	1990[2]	% Change	1991[3R]	1990[2]	% Change
Products Supplied:						
Total motor gasoline	7,124	7,304	(2.5)	6,954	7,109	(2.2)
Finished leaded motor gasoline/*	303	421	(28.0)	275	431	(36.2)
Finished unleaded motor gasoline/*	6,821	6,883	(0.9)	6,679	6,678	0.0
Naphtha-jet	193	182	6.0	176	185	(4.9)
Kerosine-jet	1,133	1,288	(12.0)	1,261	1,295	(2.6)
Distillate fuel oil	2,716	2,897	(6.2)	2,978	3,128	(4.8)
Residual fuel oil	1,108	1,222	(9.3)	1,156	1,309	(11.7)
All other oils[4]	3,752	3,992	(6.0)	3,923	3,977	(1.4)
Reclassified[5]	-182	-42	333.3	-204	-87	134.5
Total domestic products supplied	15,844	16,843	(5.9)	16,244	16,916	(4.0)
Exports	920	690	33.3	1,085	772	40.5
Total products supplied	16,764	17,533	(4.4)	17,329	17,688	(2.0)
Supply:						
Domestic production:						
Crude oil[6]	7,410	7,202	2.9	7,459	7,354	1.4
Natural gas liquids	1,644	1,499	9.7	1,651	1,516	8.9
Other supply[7]	1,178	1,100	7.1	1,143	1,022	11.8
Total domestic supply	10,232	9,801	4.4	10,253	9,892	3.6
Imports:						
Crude oil, total[8]	6,203	6,349	(2.3)	5,503	6,038	(8.9)
Canadian	750	682	10.0	774	610	26.9
Other	5,453	5,667	(3.8)	4,729	5,428	(12.9)
Products, total	1,824	2,300	(20.7)	1,676	2,300	(27.1)
Residual fuel oil	389	507	(23.3)	386	568	(32.0)
Other	1,435	1,793	(20.0)	1,290	1,732	(25.5)
Total imports	8,027	8,649	(7.2)	7,179	8,338	(13.9)
Total supply	18,259	18,450	(1.0)	17,432	18,230	(4.4)
Stock change, all oils	1,495	917	******	103	542	******
Refinery Operations						
Input to crude oil distillation units	13,705	13,570	1.0	13,224	13,423	(1.5)
Operable capacity	15,673	15,527	0.9	15,666	15,519	0.9
Refinery utilization (%)[9]	87.4	87.4	0.0	84.4	86.5	(2.4)
Crude oil runs	13,546	13,389	1.2	13,047	13,259	(1.6)

Stocks (millions bbls.)	1991		1990[2]	% Change from	
	May 31[10]	Apr. 30[10]	May. 31	Previous Month	Year Ago
Crude oil[8]	350.1	339.5	382.5	3.1	(8.5)
Unfinished oils	113.5	112.6	116.6	0.8	(2.7)
Total motor gasoline/**	213.5	204.3	218.0	4.5	(2.1)
Finished leaded motor gasoline/*	7.1	8.1	11.9	(12.3)	(40.3)
Finished unleaded motor gasoline/*	168.4	159.1	166.5	5.8	1.1
Naphtha-jet	5.8	5.8	6.9	0.0	(15.9)
Kerosine-jet	40.8	38.0	40.0	7.4	2.0
Distillate fuel oil	107.5	100.4	102.8	7.1	4.6
Residual fuel oil	44.1	44.0	49.6	0.2	(11.1)
All other oils	175.2	159.6R	168.5	9.8	4.0
Total all oils	1,050.5	1,004.2R	1,084.9	4.6	(3.2)

/1 Based on API estimated data converted to a monthly basis.
/2 Source: U.S. Department of Energy.
/3 January-March, DOE, April-May, API.
/4 Includes crude losses.
/5 Beginning with January 1981, U.S. Department of Energy began using a new data collection system which encompasses a method to ascertain the amount of product reclassified during the production phase. So that there will be no double counting of these volumes, they are subtracted from the total domestic products supplied.
/6 API estimate; includes lease condensate.
/7 Includes Unaccounted-for crude oil, which will reflect withdrawls from the SPR when they occur, processing gain, field production of other hydrocarbons and alcohol.
/8 Data do not include oil imported for the Strategic Petroleum Reserve (SPR) nor crude oil stocks held in the SPR.
/9 Represents "Input to crude oil distillation units" as a percent of "Operable capacity".
/10 Derived by interpolating API weekly stocks data.
/R Revised.
/* Included in motor gasoline.
/** Includes finished leaded, finished unleaded, and motor gasoline blending components stocks.

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American Petroleum Institute
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Monthly Statistical Report

Prepared by the Finance, Accounting, and Statistics Department

Vol. 15, No.6

JULY 17, 1991

JUNE 1991

SUMMARY

In this year's first half, deliveries experienced the largest drop for a similar period since 1983, while domestic crude oil production's rise was the first for a six-month span since 1985. As a result—and in contrast with the longer-term trend of the past half-decade—petroleum imports declined.

Although part of the 13.3 percent, 1.1 million B/D drop in imports reflected differences in inventory patterns this year versus last, the remaining two thirds represented underlying supply/demand factors. Even with this year's first-half decline, total imports remained roughly 50 percent higher than the 1985 average and still amounted to 45 percent of domestic deliveries.

The sluggishness of the economy during the past several quarters was a major contributor to the steepness of the first half's deliveries decline of more than 4 percent. Year-to-date deliveries averaged 16.3 million B/D, the lowest level for a similar period in five years. Gasoline and distillate deliveries each fell to their lowest levels for the first half since the mid-1980s, while kerosine jet fuel witnessed its first year-to-year decline for a six-month period since 1982. Residual fuel oil deliveries were the lowest in decades.

Though total deliveries' second quarter decline of 4.3 percent was about the same as the 3.8 percent drop of the first, deliveries for June alone fell only 2.6 percent. Monthly deliveries data typically incorporate a fair amount of volatility. But with indications in recent months that the recession is ending, June's lesser decline is at least consistent with apparent trends in the economy. However, it should be noted that, even during the period of economic growth immediately preceding the most recent recession, petroleum consumption had been declining.

In fact, petroleum consumption has been growing more slowly than the economy since the late 1970s. Since petroleum consumption's peak in 1978, the economy has grown by a third, total conventional energy consumption has risen about 4 percent—but petroleum consumption has fallen by about 10 percent. This pattern has continued in recent years. Over the three-year period 1987 to 1990, GNP grew 8 percent and energy usage 6 percent, while oil consumption rose about 2 percent. The accompanying graph (page 2) illustrates how oil consumption per dollar of Gross National Product, through the effects of conservation and switching to other fuels, has continued to decline over the past decade to a rate one third lower than in 1978. Without this decline, the current size of the economy would imply oil consumption of 25 million B/D, a rate 50 percent higher than actual levels.

The first half's increase in domestic crude oil production, though amounting to only 0.6 percent, nevertheless contrasted markedly with the 18 percent, 1.6 million B/D decline of the prior five years. Production in the lower 48 held steady, while Alaska's output rose 3.5 percent. However, new drilling, as well as the servicing of existing wells, have both recently been declining from their highs in last year's fourth quarter.

Total inventories during the second quarter rose more than 80 million barrels, following the drawdown during-the Persian Gulf crisis that left stocks at the lowest March level in five years. Much of the second quarter build was in product stocks, the result of the divergence between increased refinery activity, up close to 1 percent, and reduced demand.

PRODUCT SUPPLIED[1]

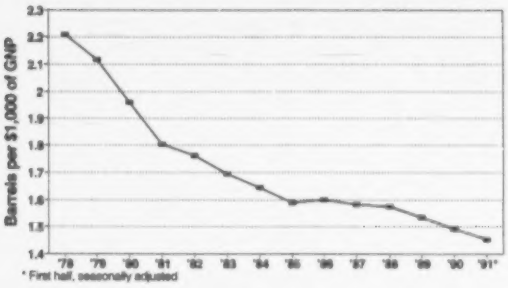
Gasoline

DECLINE MODERATES IN SECOND QUARTER. Gasoline deliveries fell 2.1 percent in the first half to 7.043 million B/D, the lowest level for a similar six-month period since 1986. Paralleling apparent trends in the economy, gasoline deliveries, though declining more rapidly earlier in the year, have still been weak in recent months.

The second quarter's decline rate of 1.1 percent, more moderate than the 3.1 percent of the first, was still hardly an indication of renewed strength. Even June's deliveries, though stronger than in prior months, were still down slightly from a year ago. However, with improvements in overall fleet efficiency cutting fuel consumption per mile by 2-3 percent per year, gasoline deliveries had been declining during the past year or two even before the most recent economic recession began. Thus, though in recent months travel has been roughly even compared with a year ago, gasoline deliveries have continued to show declines.

	API ESTIMATES JUNE		YEAR-TO-DATE	
	Million B/D	Percent Change	Million B/D	Percent Change
Total domestic deliveries	16.7	(2.6)	16.3	(4.1)
Crude production[2]	7.4	3.6	7.4	0.6
Total imports[2]	8.2	(6.4)	7.3	(13.3)
Stocks (million bbls)[3]	1,071	(2.5)	na	na

Petroleum Consumed per $1,000 of GNP



Retail gasoline prices slipped by roughly 2 cents during June. Despite a spring-time rise during April and May, prices have fallen on net by about 10 cents from the beginning of the year, and, adjusted for inflation, averaged only about 2 percent higher in June than one year earlier. On a nominal basis, the year-to-year increase in retail prices averaged 7-8 cents. Once increases in Federal and State excise taxes averaging about 6 cents per gallon are taken into account, this reflected less than a quarter of the roughly 8 cent rise in crude oil prices.

Despite the decline in retail prices during the first half, premium unleaded has not fully recovered the market share it held before the substantial drop-off in the second part of last year in response to higher prices following the Iraqi invasion of Kuwait. Premium's share, which had been 22 percent a year ago, dropped to less than 16 percent by October and, according to the most recent data available from the Department of Energy, has more recently remained at around 18 percent. Mid-grade has maintained its share of about 10 percent, the shift into mid-grade from premium apparently matching the shift out of mid-grade to regular unleaded. With leaded regular's share continuing to dwindle, the net gainer has been unleaded regular. Its share has been running 69-70 percent, up from 63 percent a year ago.

Distillates

INDICATORS SUGGEST STRENGTHENING.

While deliveries of distillate fell slightly more in the second quarter than in the first, there were signs in May and in June that the underlying decline in consumption was beginning to ease—a notion perhaps supported by June's more moderate 2.9 percent decline in distillate fuel supplied. For the month, indicators of highway, railroad, and electric utility use of distillates suggested either consumption increases, or more moderate declines than earlier in the year. June's decline in distillate supplied compared favorably with the average drop of 4.5 percent over the first half and to the comparable weather-adjusted trend over the previous few months.

Based on truck travel data, we estimate that highway diesel demand was flat (and perhaps increasing slightly) during June, after having been down by about 3-4 percent earlier in the year. Furthermore, the decline in railroad diesel demand appears to have moderated in June, as car loadings fell by only 4-5 percent compared to their 8 percent slide during the first five months of the year. Weather was also a factor in distillate demand during the month. However, unlike earlier in the year, when temperate weather suppressed heating fuel demand, the unusually hot weather in June, particularly in the East (where cooling degree days were up more than 40 percent, year to year) likely brought an increase in distillate consumption by utilities for meeting peak generation needs.

Over the long run, however, compositional shifts in distillate sales have made weather a decreasingly significant factor in explaining variations in distillate deliveries. During the past two decades, distillate deliveries growth has come primarily from the less-seasonal highway and bunker markets. Between 1970 and 1989 (the most recent year for which end-use data are available), sales in these two transportation markets increased from 23 percent to 52 percent of the total. Over the same period, fuel switching by households and utilities, turnover of old oil-heated buildings, and population migration south and west all contributed to a fall in the heating oil and utility share of the distillate market from 59 percent to 33 percent.

Residual Fuel Oil

SECOND QUARTER STILL DECLINES 6 PERCENT.

Deliveries of residual fuel fell less rapidly during the second quarter than the first, a result in part of unusually hot weather and sharply lower prices. However, high secondary resid stocks and declining natural gas prices helped keep the recent weather-related power generation surge in the resid-intensive East from putting an end to the persistent deliveries' slide. Nonetheless, the second quarter's drop of 5.9% was a marked improvement on the roughly 13 percent weather-adjusted first quarter drop.

With the exception of May and June, first half weather was more temperate this year than last, and significantly more moderate than normal. As a result, supplies of natural gas otherwise servicing residential and commercial heating needs were freed up for electric utility use. A consequence of this was that utility consumption of resid was down, and utility stocks were above normal early in the spring, enabling some to postpone purchases. For the first four months of the year, utility consumption of heavy oil was reportedly off more than 17 percent from the same period a year ago. By the time temperatures began increasing in May, utility stocks (in days forward of consumption) had climbed more than five weeks above their May 1 average of about 100 days for the previous three years.

While still less competitive with gas than they were a year ago, resid prices have fallen more rapidly than gas prices since the beginning of the year. Between January and the end of June, spot resid price fell by half, compared to 35-40 percent declines in gas prices.

Declining petroleum imports are believed to have translated into lower demand for resid as a bunker fuel. Estimated net waterborne petroleum trade was down about 10 percent during the first half. Such a drop could mean about a 20 thousand B/D drop in bunker fuel sales.

Kerosine Jet Fuel

DELIVERIES' DROP DIFFERS WITH AIR TRAFFIC TREND.

In contrast to trends in airline consumption, deliveries of jet fuel fell more sharply, year to year, during the second quarter than they had during the first—down 10.5 percent versus 0.6 percent. For the first six months collectively, deliveries were off 5.5

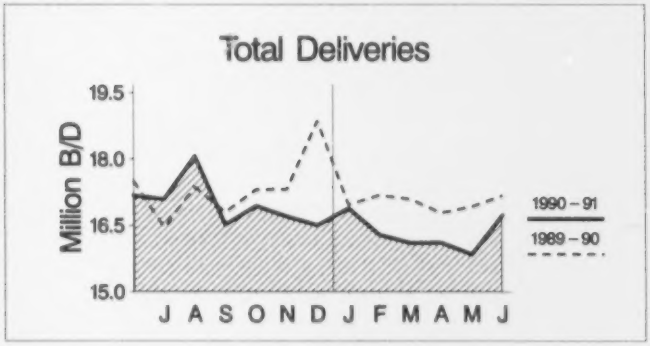
percent—their first semi-annual drop in nine years. Meanwhile, the downward trend in jet fuel consumption, as estimated by miles flown, moderated during the second quarter; in fact, in June, it appears that miles flown increased slightly. The divergence between trends in deliveries and in miles flown appears to have resulted from non-primary inventory shifts and from factors outside the commercial aviation industry.

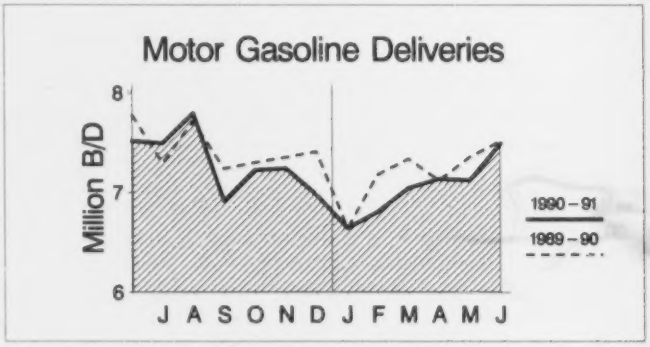
Clearly, events which dampened jet fuel demand early in the year have moderated in more recent months. The roughly 20 thousand B/D of domestic military deliveries which were deflected overseas following the U.S. airlift to the Persian Gulf last fall likely returned following the War. And the war-related, 5 percent decline in miles flown during February, March, and April has begun turning around the past two months. However, the absence of Eastern Airline's flight operations since mid-January likely has slowed the recovery in traffic growth. With declining load factors, other airlines are thought to have been able to pick up Eastern's 3-4 percent market share without adding many additional flights.

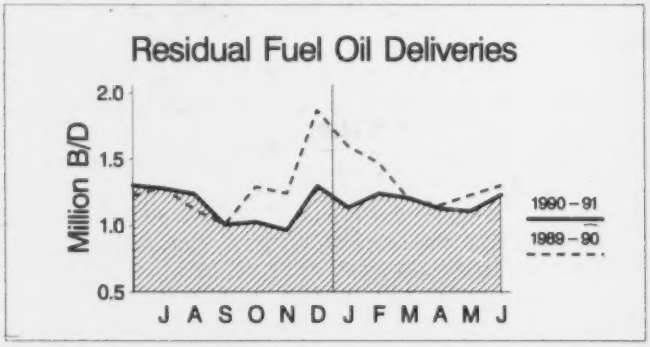
With commercial and military traffic returning, the recent weakness in deliveries may be due either to nonprimary stock movements or to factors outside these two sectors. Perhaps 15 percent of annual jet fuel deliveries go to satisfy non-commercial aviation demand, jet fuel blending with distillates, and electric utility generation needs.

Other Oils

SLIGHT DECLINE IN FIRST HALF. Deliveries of "other oils" dropped 0.8 percent, or about 30 thousand B/D, during the first half, with most products in this category showing estimated declines for the period in response to unfavorable economic conditions. The one exception was for ethane deliveries, which had experienced a year-to-year gain in the first quarter. However, this was essentially the result of a recovery from unusually low levels a year earlier.







SUPPLY [1/]

Production

FIRST SIX-MONTH RISE SINCE 1985. Amounting to less than a 1 percent rise, the first half's year-to-year increase in domestic crude oil production was nevertheless the first for a similar period since 1985.

Lower 48 production, which had fallen from 7.1 million B/D in 1985 to 5.6 million B/D last year—a drop of 22 percent—was flat in this year's first half. Alaskan output, down by more than 200 thousand B/D between 1988 and 1990, rose 3.6 percent for the first six months of this year to 1.845 million B/D, following facilities enhancement and an accelerated well fracturing program last year. Though Alaskan production for June showed a nearly 9 percent, 140 thousand B/D increase, this was in large part because last year's North Slope projects necessitated a temporary reduction in production in June a year ago.

Though the first-half increase in crude production was clearly a departure from the trend of the past five years, the domestic supply picture is clouded by the drop-off in domestic upstream activity during the first half of 1991. First, the uptick in the drilling of new wells of the past year has apparently receded. The number of rigs drilling new wells was off by nearly 15 percent, year to year, in June, though weak natural gas prices no doubt played a significant role in that decline. Meanwhile, maintenance and servicing of existing wells has returned to levels prior to those of the surge of last year's fourth quarter. The number of service rigs at work, after reaching nearly 4,000 last December, has since dropped to around 3,400, about equal to year-ago levels.

Furthermore, on the North Slope, last year's enhancements raised the level of production, but did not alter the fact that as fields age, natural decline can only be postponed but not eliminated. Although last year's efforts have continued to result in year-to-year gains in Alaska's output averaging about 50 thousand B/D before June, production there is still well below the annual peak of over 2 million B/D set in 1988.

Imports

13 PERCENT DROP DEPARTS FROM LONGER-TERM TREND.

The result of increasing domestic production, declining domestic consumption, and contrasting inventory behavior, petroleum imports fell by over 1.1 million B/D, year to year, during the first six months of 1991—the largest semi-annual drop in nine years. The decline contrasts sharply with an average year-to-year increase of about 680 thousand B/D seen during the two and a half years prior to last August's invasion. For the half, imports accounted for 45 percent of domestic deliveries, compared to 49.8 percent during the same period in 1990. While more than a third of the first-half decline was explainable by a smaller net stock build this year than last, most of the decline was the result of a combination of increased domestic production and lower domestic consumption. Even if adjusted for differences in inventory builds, imports would have been down nearly 700 thousand B/D during the first half, year to year.

Despite being flat in June, first-half crude imports were down 7.2 percent, year to year. Declines in product imports accounted for about 60 percent of the first-half drop by volume, but because of scale, the declines in percentage terms were far more dramatic than for crude imports. The drop in product imports had been greatest in the first quarter, down more than 900 thousand B/D or 38 percent due to weak demand and reduced availability on world markets. However, product imports have shown signs of modest recovery since the end of the Gulf War, with the second quarter's decline shrinking to about half that size despite continued weakness in domestic demand.

While down by nearly half in the first quarter and 10 percent for the second, June imports of finished gasoline of about 370 thousand B/D approached levels of a year ago. Distillate imports, down about 200 thousand B/D in the first quarter, were off by only about 50 thousand B/D, or 20 percent, in the second and a roughly similar amount in June. Kerosine jet fuel deliveries' second quarter level of about 70 thousand B/D was still off about 50 thousand B/D from a year ago, but the decline was only about half that of the first quarter.

After growing by nearly 400 thousand B/D during the first quarter, refined product exports (largely middle distillates) are also believed to have returned closer to year ago levels during the second quarter, with any increases in recent months more related to Western Hemisphere phenomena than to the Gulf crisis. The forces which led to the decrease in U.S. product imports (high military demand overseas, low domestic heating fuel demand, high heating fuel demand in Europe, and price premiums overseas) had been influential in increased U.S. product exports early in the year.

Refinery Operations

ACTIVITY PICKS UP IN SECOND QUARTER...

Second quarter refinery activity picked up markedly from that of the first. On a year-to-year basis, input to distillation units rose close to 1 percent for April-June after a 3.1 percent decline for the first quarter. With the continued weakness in deliveries, the increases in product output allowed product inventories, particularly of gasoline, to rise from the lower-than-typical levels experienced early in the year. Gasoline output, after dropping 3 percent in the first quarter, rose by about the same amount in the second. Production of distillate fuel oil and kerosine jet fuel were both roughly flat in both the first and second quarters.

Utilization for the first half averaged 85.3 percent of reported capacity, down more than a percent from the 86.8 percent of a year ago. On the basis of capacity in operation, utilization averaged nearly 89 percent for the first half, the lowest rate for a similar period since 1987. However, the second quarter's rate of a little over 90 percent, though down a point or so from a year ago, was not atypical of second quarter operating rates of the last several years.

Inventories

...AND PRODUCT STOCKS RISE.

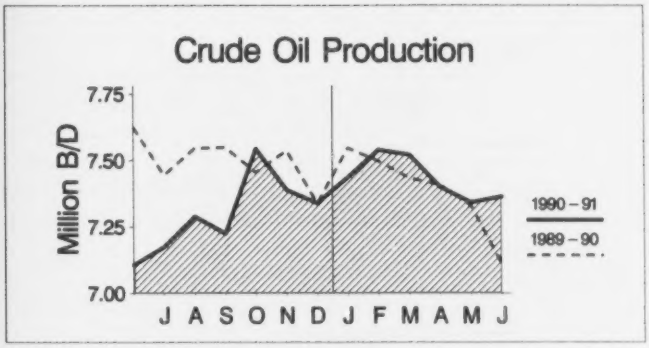
Rebuilding during the second quarter helped to raise total inventories to 1,071 million barrels, a level relatively typical for the end of June, after stocks had been drawn down to the lowest March level in five years during the Persian Gulf crisis. The second quarter build amounted to a little over 80 million barrels, about two-and-a-half times the average increase. During the first quarter, total stocks had fallen 45 million barrels.

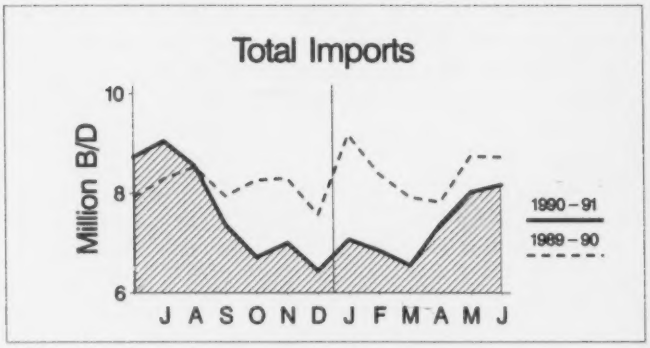
Much of the second quarter build was in product stocks, which, because of higher refinery activity during a period of declining deliveries, rose 68 million barrels—more than twice the recent-year average for that period. By the end of June, gasoline inventories had risen to 218 million barrels, slightly higher than those of the last few years, from lower-than-typical levels during the spring. Distillate stocks ended the month at 113 million barrels, up nearly 10 million barrels over the average of the previous five Junes. Crude oil inventories, at 350 million barrels, were near the recent-year average for the month.

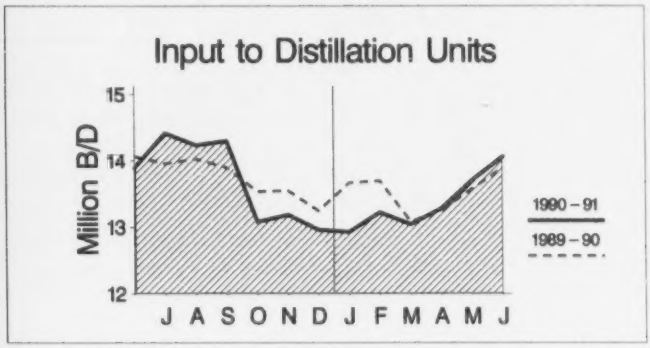
1/ Total supply, i.e., production plus imports adjusted for net stock change is equal to total products supplied from primary storage. Total products supplied from primary storage less exports is equal to total domestic products supplied. Information contained in this report is derived from information published in the API Weekly Bulletin and is based on historical analysis of the industry. All data reflect the most current information available to the API and include all previously published revisions.

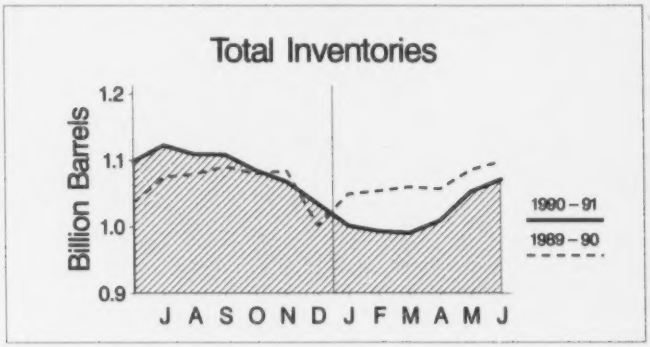
2/ Includes lease condensate.

3/ API data do not include crude oil imported for the Strategic Petroleum Reserve (SPR) nor crude oil stocks held in the SPR (according to the U.S. Department of Energy, the SPR held approximately 569 million barrels as of June 30, 1991).


Crude Oil Production
Million B/D
7.75
7.50
7.25
7.00
J A S O N D J F M A M J
1990 – 91
1989 – 90


Total Imports
Million B/D
10
8
6
J A S O N D J F M A M J
1990 – 91
1989 – 90


Input to Distillation Units
Million B/D
15
14
13
12
J A S O N D J F M A M J
1990 – 91
1989 – 90


Total Inventories
Billion Barrels
1.2
1.1
1.0
0.9
J A S O N D J F M A M J
1990 – 91
1989 – 90

ESTIMATED UNITED STATES PETROLEUM BALANCE
(Daily Average in Thousands of 42 Gallon barrels)

Products Supplied/Supply From Primary Storage	JUNE			YEAR-TO-DATE		
	1991[1]	1990[2]	% Change	1991[3R]	1990[2]	% Change
Products Supplied:						
Total motor gasoline	7,495	7,519	(0.3)	7,043	7,192	(2.1)
Finished leaded motor gasoline/*	269	420	(36.0)	277	429	(35.4)
Finished unleaded motor gasoline/*	7,226	7,099	1.8	6,766	6,763	0.0
Naphtha-jet	189	170	11.2	175	182	(3.8)
Kerosine-jet	1,236	1,320	(6.4)	1,258	1,330	(5.4)
Distillate fuel oil	2,839	2,923	(2.9)	2,958	3,097	(4.5)
Residual fuel oil	1,229	1,302	(5.6)	1,173	1,322	(11.3)
All other oils[4]	3,948	3,977	(0.7)	3,935	3,966	(0.8)
Reclassified[5]	-214	-45	375.6	-220	-77	185.7
Total domestic products supplied	16,722	17,166	(2.6)	16,322	17,012	(4.1)
Exports	842	803	4.9	1,009	777	29.9
Total products supplied	17,564	17,969	(2.3)	17,331	17,789	(2.6)
Supply:						
Domestic production:						
Crude oil[6]	7,363	7,106	3.6	7,428	7,386	0.6
Natural gas liquids	1,623	1,458	11.3	1,653	1,515	9.1
Other supply[7]	1,022	1,108	(7.8)	1,108	957	15.8
Total domestic supply	10,008	9,672	3.5	10,189	9,858	3.4
Imports:						
Crude oil, total[8]	6,400	6,407	(0.1)	5,676	6,119	(7.2)
Canadian	732	699	4.7	766	624	22.8
Other	5,668	5,708	(0.7)	4,910	5,495	(10.6)
Products, total	1,767	2,323	(23.9)	1,666	2,347	(29.0)
Residual fuel oil	417	485	(14.0)	393	561	(29.9)
Other	1,350	1,838	(26.6)	1,273	1,786	(28.7)
Total imports	8,167	8,730	(6.4)	7,342	8,466	(13.3)
Total supply	18,175	18,402	(1.2)	17,531	18,324	(4.3)
Stock change, all oils	611	433	******	200	535	******
Refinery Operations						
Input to crude oil distillation units	14,061	13,893	1.2	13,372	13,524	(1.1)
Operable capacity	15,673	15,597	0.5	15,673	15,582	0.6
Refinery utilization (%)[9]	89.7	89.1	0.7	85.3	86.8	(1.7)
Crude oil runs	13,897	13,689	1.5	13,181	13,327	(1.1)

Stocks (millions bbls.)	1991		1990[2]	% change from...	
	Jun. 30[10]	May 31[10]	Jun. 30	Previous Month	Year ago
Crude oil[8]	349.6	350.1	384.2	(0.1)	(9.0)
Unfinished oils	109.2	113.5	117.2	(3.8)	(6.8)
Total motor gasoline/**	217.9	213.5	212.6	2.1	2.5
Finished leaded motor gasoline/*	7.4	7.1	10.5	4.2	(29.5)
Finished unleaded motor gasoline/*	170.7	168.4	165.0	1.4	3.5
Naphtha-jet	5.8	5.8	7.0	0.0	(17.1)
Kerosine-jet	42.8	40.8	40.4	4.9	5.9
Distillate fuel oil	113.3	107.5	109.9	5.4	3.1
Residual fuel oil	44.1	44.1	46.8	0.0	(5.8)
All other oils	188.2	177.2R	180.3	6.2	4.4
Total all oils	1,070.9	1,052.5R	1,098.4	1.7	(2.5)

/1 Based on API estimated data converted to a monthly basis.
/2 Source: U.S. Department of Energy.
/3 January-April, DOE, May-June, API.
/4 Includes crude losses.
/5 Beginning with January 1981, U.S. Department of Energy began using a new data collection system which encompasses a method to ascertain the amount of product reclassified during the production phase. So that there will be no double counting of these volumes, they are subtracted from the total domestic products supplied.
/6 API estimate; includes lease condensate.
/7 Includes Unaccounted-for crude oil, which will reflect withdrawls from the SPR when they occur, processing gain, field production of other hydrocarbons and alcohol.
/8 Data do not include oil imported for the Strategic Petroleum Reserve (SPR) nor crude oil stocks held in the SPR.
/9 Represents "Input to crude oil distillation units" as a percent of "Operable capacity".
/10 Derived by interpolating API weekly stocks data.
/R Revised.
/* Included in motor gasoline.
/** Includes finished leaded, finished unleaded, and motor gasoline blending components stocks.

ESTIMATED UNITED STATES PETROLEUM BALANCE
(Daily Average in Thousands of 42 Gallon barrels)

Products Supplied/Supply From Primary Storage	2ND QUARTER		
	1991[1]	1990[2]	% Change
Products Supplied:			
Total motor gasoline	7,251	7,333	(1.1)
Finished leaded motor gasoline/*	283	420	(32.6)
Finished unleaded motor gasoline/*	6,968	6,913	0.8
Naphtha-jet	179	182	(1.6)
Kerosine-jet	1,187	1,323	(10.3)
Distillate fuel oil	2,807	2,955	(5.0)
Residual fuel oil	1,154	1,226	(5.9)
All other oils[3]	3,855	3,989	(3.4)
Reclassified[4]	-214	-56	382.1
Total domestic products supplied	16,219	16,952	(4.3)
Exports	834	751	11.1
Total products supplied	17,053	17,703	(3.7)
Supply:			
Domestic production:			
Crude oil[5]	7,361	7,281	1.1
Natural gas liquids	1,641	1,485	10.5
Other supply[6]	1,110	928	19.6
Total domestic supply	10,112	9,694	4.3
Imports:			
Crude oil, total[7]	6,044	6,184	(2.3)
Canadian	749	657	14.0
Other	5,295	5,527	(4.2)
Products, total	1,814	2,251	(19.4)
Residual fuel oil	407	517	(21.3)
Other	1,407	1,734	(18.9)
Total imports	7,858	8,435	(6.8)
Total supply	17,970	18,129	(0.9)
Stock change, all oils	917	426	*****
Refinery Operations			
Input to crude oil distillation units	13,682	13,573	0.8
Operable capacity	15,678	15,587	0.6
Refinery utilization (%)[8]	87.3	87.1	0.2
Crude oil runs	13,494	13,375	0.9

Stocks (millions bbls.)	2ND QUARTER		
	1991[9]	1990[R2]	% Change
Crude oil[7]	349.6	384.2	(9.0)
Unfinished oils	109.2	117.2	(6.8)
Total motor gasoline/**	217.9	212.6	2.5
Finished leaded motor gasoline/*	7.4	10.5	(29.5)
Finished unleaded motor gasoline/*	170.7	165.0	3.5
Naphtha-jet	5.8	7.0	(17.1)
Kerosine-jet	42.8	40.4	5.9
Distillate fuel oil	113.3	109.9	3.1
Residual fuel oil	44.1	46.8	(5.8)
All other oils	188.2	180.3	4.4
Total all oils	1,070.9	1,098.4	(2.5)

/1 Source: U.S. Department of Energy, April: May-June, API.
/2 Source: U.S. Department of Energy.
/3 Includes crude losses.
/4 Beginning with January 1981, U.S. Department of Energy began using a new data collection system which encompasses a method to ascertain the amount of product reclassified during the production phase. So that there will be no double counting of these volumes, they are subtracted from total domestic products supplied.
/5 API estimate; includes lease condensate.
/6 Includes Unaccounted-for crude oil, Processing gain and Field Production of other hydrocarbons and alcohol.
/7 Data do not include oil imported for the Strategic Petroleum Reserve (SPR) nor crude oil stocks held in the SPR.
/8 Represents "Input to crude oil distillation units" as a percent of "Operable capacity".
/9 Derived by interpolating API weekly stocks data.
/R Revised.
/* Included in motor gasoline.
/** Includes finished leaded, finished unleaded, and motor gasoline blending components stocks.

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Monthly Statistical Report

Prepared by the Finance, Accounting, and Statistics Department

Vol. 15, No. 7

AUGUST 14, 1991

JULY 1991

SUMMARY

The rate of decline in total deliveries, which had been running at around 4 percent for much of the first half, continued to moderate in July. For the month, deliveries slipped 2.1 percent versus one year earlier, following a 2.6 percent decline in June.

The direction of these developments in petroleum deliveries is not inconsistent with the apparent bottoming out of the economic recession. However, even with the slight upturn in GNP estimated for the second quarter, the economy may have only begun to regain the ground lost during the previous two quarters. On a year-to-year basis, the second quarter's slight gain over the first translates into a decline in GNP of roughly half a percent versus a year ago, and in the most recent month or two the economy could have at best barely matched its year-ago level. Thus, it is not surprising that deliveries, which had been slipping even before the recession began, have still been declining year to year, though at a lesser rate than before.

Most major products shared in the moderating of the decline rate. Gasoline deliveries, already apparently stronger in the second quarter than our initial estimates, rose 1.3 percent in July. Kerosine jet fuel deliveries met with their first year-to-year increase since February, while distillate deliveries, which had experienced declines of 4 to 5 percent during the first and second quarters, also rose slightly. Residual fuel oil deliveries, however, still fell 18 percent from a year ago. It remains unclear what portion of July's lessening in the decline in deliveries represents underlying consumption trends, however. For example, despite the month's increase in gasoline deliveries, recent flatness in travel trends and continued improvement in average fleet efficiency suggest that underlying consumption was still down, year to year, in July.

Domestic crude oil production, continuing to depart from the decline trend of the prior five years, was up 3.7 percent for July. More than half the apparent increase, however, was in Alaska, where year-ago levels had been temporarily reduced by facilities enhancement projects. Even so, Alaskan production so far this year has averaged 150 thousand B/D higher than what would have occurred had the decline trend prior to last summer's North Slope projects continued uninterrupted.

Total imports continued their year-to-year decline in July, falling 13 percent. Even with the moderation in the weakness in domestic deliveries of the past two months, the underlying trend in imports has continued to be one of decline. July's product imports were higher than for June, but, at 1.9 million B/D, were still down 13 percent from a year ago.

Refinery activity, which during the second quarter had been running ahead of year ago levels despite the weakness in deliveries, slipped in July. Input to distillation units declined about 4 percent, with output of most products declining as well versus last July. Gasoline production, however, held roughly steady.

Total inventories rose 10 million barrels for the month, about half the July average. But because of substantial rebuilding during the second quarter, the month-end level of 1,085 million barrels slightly exceeded the average for July in recent years.

PRODUCT SUPPLIED [1/]

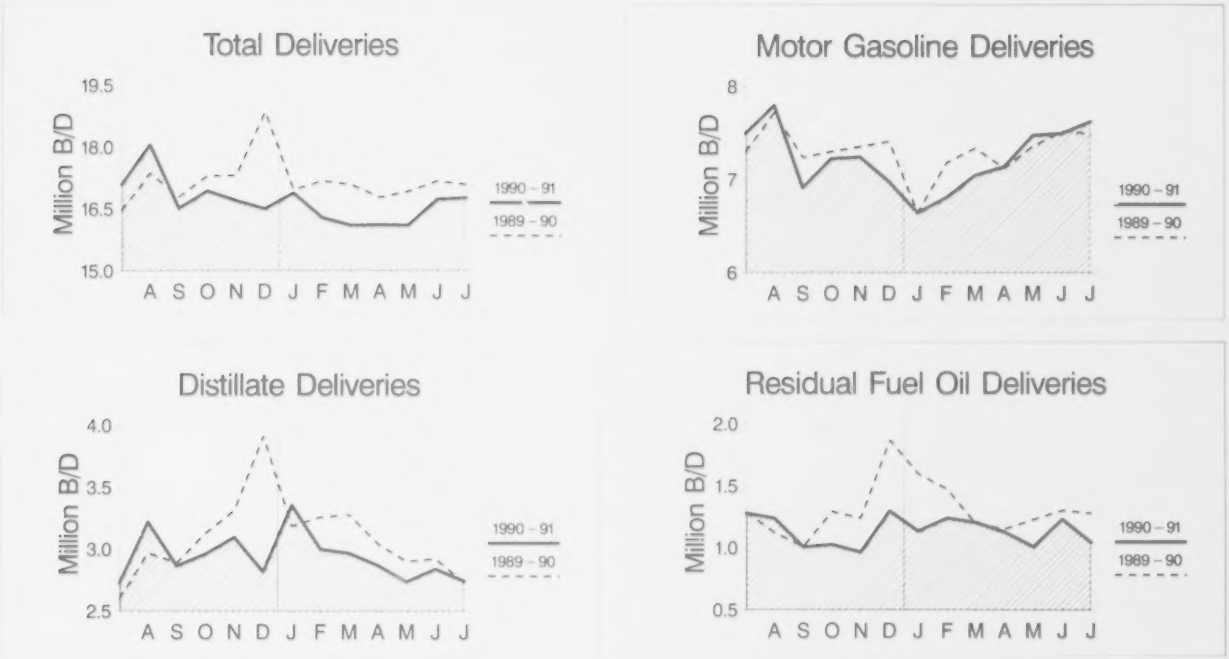
Gasoline

INCREASE CONTRASTS WITH EARLIER DROP. Gasoline deliveries rose 1.3 percent in July—and with the surprising strength of May's recently-released deliveries data from the Department of Energy, second quarter deliveries are now calculated to have been up slightly as well. These data are somewhat puzzling, however, since although hints of an economic turnaround and declines in gasoline prices would be expected to have moderated gasoline's rate of decrease, it seems doubtful that underlying consumption in July actually matched or exceeded that of a year ago.

With July's retail prices slipping another 2.5 cents from June, gasoline prices, on an inflation-adjusted basis, have by now been within a few percent of year-ago levels for nearly six months, despite higher federal and state taxes. Thus, the demand-dampening effects of higher prices in the latter part of last year, when prices briefly reached levels about 25 percent higher than immediately prior to Iraq's invasion of Kuwait in early August, have likely long since dissipated. Signs that the recession has bottomed out also suggest some strengthening, though perhaps only moderate, in gasoline demand.

Nevertheless, even before the most recent recession, gasoline deliveries were declining because of the continued improvement in the average fuel efficiency of vehicles on the road. In fact,

	API ESTIMATES JULY		YEAR-TO-DATE	
	Million B/D	Percent Change	Million B/D	Percent Change
Total domestic deliveries	16.7	(2.1)	16.4	(3.6)
Crude production[2/]	7.4	3.7	7.4	1.0
Total imports[3/]	7.9	(13.0)	7.5	(12.5)
Stocks (million bbl)[4/]	1,085	(3.3)	na	na



since 1985, though overall miles traveled have increased more than 20 percent, highway fuel consumption (including diesel) has risen only about 8 percent. Thus, with the most recent data on miles traveled roughly flat versus a year ago, underlying consumption would still be expected to have declined slightly in July.

Distillates

FLAT HIGHWAY USE, BUT STRONGER UTILITY DEMAND. Distillate deliveries increased, year to year, in July for only the second time since last August. However, while the modest 0.5 percent increase is an extension on the pattern of moderating losses evident since the end of the war, (and is not inconsistent with the premise of improving economic conditions), indicators of underlying consumption in July showed almost no change in the year-to-year trend from June.

Rail ton-miles remained down, year to year, in the 3-4 percent range, while highway truck tonnage is believed to have been about the same as last July. If there was a sector in which distillate demand perhaps grew, it was the small, but weather-sensitive, utility sector, where higher temperatures likely increased demand by peak distillate-fired generating units. However, it is unlikely that the effects of weather had an impact greater than 1 percent, or 25-30 thousand B/D, on distillate deliveries.

Residual Fuel Oil

SHARP DECLINE OVERSTATES TREND. Contrasting with the moderating declines of recent months, resid deliveries were off 18.4 percent, or 236 thousand B/D, in July—a drop somewhat surprising in magnitude given warmer weather, an increase in power generation, and increasingly competitive resid prices vis-a-vis gas. However, given the variability inherent in the monthly delivery data, it is too early to ascribe July's sharper decline to any dramatic shift in the underlying consumption trend, which we have estimated at about a 6 percent decline in recent months.

Early in 1991, the decline in resid deliveries had resulted, to a considerable degree, from utility fuel substitution with natural gas. From January to April, the drop in net petroleum electricity generation was offset almost one-for-one by an increase in net generation from gas. Relative prices were an influencing factor, as were the additional supplies of gas freed up by the relatively mild winter. But, relative prices have moved closer together in recent months, and by the end of July, spot resid prices were actually slightly more competitive with gas than they had been a year ago. Furthermore, cooling degree days in the resid-intense East were up more than 10 percent from already warm weather a year ago. The result was an increase of about 3-4 percent in power generation in the East.

These two factors (price and weather) make fuel switching with gas an unlikely explanation for July's sharper decline in deliveries. Natural gas is often the fuel of choice for dual-fueled generating units during the summer. However, as temperatures go up, the potential falls for switching more resid consumption to gas, since most utilities with the capacity (and for whom it is economic) to burn gas, already are burning gas. As a result, summer surges in electricity demand are often accompanied by disproportionate increases in resid consumption by utilities. This occurred in May of this year, when particularly warm weather contributed to a 12 percent, year-to-year increase in resid-fired generation (reversing an 18 percent, year to year, decline during the more temperate first third of the year). Based on weather this July versus last, increased resid-fired generation could be expected to have added perhaps 25-30 thousand B/D to utility consumption.

In bunker markets, resid deliveries are thought to have been affected by the July 15 extension of California's state/local sales

tax to bunker fuels, which had previously been exempt from the 8.25 percent levy. With California accounting for roughly 40 percent of U.S. resid bunkers, the impact could be significant if the tax (which equates presently to about a dollar a barrel), encourages more overseas bunkering.

Kerosine Jet Fuel

DECLINE REVERSED FOR JULY. After declining in five of the year's first six months, jet fuel deliveries grew in July by 2.1 percent. The growth was not unexpected, given moderating declines in passenger travel and a return of growth in air cargo shipments over the past few months.

Despite July's growth, the divergence between declines in deliveries and apparent declines in underlying consumption over the past four months has not been eliminated. It is not unusual, in the short run, for growth in jet fuel deliveries to be at a variance with growth in miles flown; however, since April, deliveries have been off by roughly 4 percent more than estimated underlying consumption, indicating either a relatively large draw on non-primary inventories over this period, or a drop off in jet fuel consumption outside the commercial aviation sector.

While air traffic has, without question, picked up from wartime lows, there have been mixed signals during the past few months over the extent of the recovery. Growth has apparently been stronger for majors than for nationals or large regionals. Even accounting for the effects of route transfers and for the demise of Eastern Airlines, miles flown by major U.S. airlines have been up in the 1-2 percent range over the past three months, according to company traffic reports. However, estimates provided by the Air Transport Association (which includes non-majors), indicate a decline in miles flown of roughly the same order of magnitude. Transportation Department data on fuel consumption tends to back this up, with consumption down in recent months, year to year, both on domestic and on international routes.

Other Oils

DELIVERIES DROP 5.4 PERCENT. Deliveries of "other oils" dropped 5.4 percent in July, through much of the decline reflected unusually strong deliveries last July. Had the year-ago figure been closer to last year's trend, deliveries would have been down only slightly. Even so, for the year to date, deliveries of "other oils" have averaged a little less than 4 million B/D, the lowest level for a similar period in five years.

SUPPLY [1]

Production

ALASKAN OUTPUT 150 THOUSAND B/D ABOVE PRIOR TREND. Domestic crude oil production rose 3.7 percent, or about 260 thousand B/D, over the year-ago level in July. Lower 48 production increased close to 120 thousand B/D for the month, keeping its year-to-date average even with the year-ago level—in contrast with the drop of more than 20 percent over the previous five years. But more than half of July's increase in the U.S. total was in Alaska, the result of comparison against last summer's levels which had been temporarily reduced by water and gas handling projects on the North Slope.

Nevertheless, so far this year, Alaskan production has been substantially above what it would have been without last year's projects. Between 1988 and early 1990, Alaska's production decline averaged more than 100 thousand B/D per year. Production there so far this year has averaged about 150 thousand B/D above the levels implied had that decline trend continued without interruption. Even so, Alaskan production for the first seven months was still down nearly 10 percent from its peak in 1988 of just over 2 million B/D.

Well completions rose 9 percent in the second quarter, with a 28 percent increase in oil well completions partially offset by an 8 percent drop for natural gas, according to the most recent API estimates. Dry holes rose about 2 percent versus the same quarter one year earlier. The increase in oil well completions, however, was measured against year-ago completions which had been at the lowest second-quarter level since the early 1970s. Even with this year's second-quarter increase, oil well completions were still only about one third their level of 1985.

In addition, because data on well completions measure activities that differ from those measured by figures such as those on rotary rig activity, trends in completions can lag behind other indicators. Thus, although estimated total well completions rose in the second quarter, the number of active rigs fell 12 percent year to year.

Imports

YEAR-TO-YEAR DECLINE CONTINUES. At about 7.9 million B/D, total imports were down more than 1.15 million B/D, year to year, in July. While this 13 percent drop more than doubles the rate of decline in recent months, it reflects smaller stock builds this July than last. Had inventory builds been more typical for the time of year, then imports of about 8.3 million B/D would have been needed for the month. This represents roughly a 700 thousand B/D drop from the stock-adjusted figure for last July—about the same as in this year's first half—as the effects of moderating declines in product deliveries during July were balanced by higher crude and NGL production.

Declining crude imports accounted for roughly three-quarters of the year-to-year drop. Down roughly 80 thousand B/D during the second quarter, crude imports were off over 890 thousand B/D in July. However, the comparison is made against exceptionally high levels during July a year ago, when crude imports reached their highest monthly mark since the late seventies.

Though higher than in June, imports of refined products continued to be off sharply, year to year. Transatlantic price premiums early in the month contributed to the 189 thousand B/D fall in finished gasoline imports to 243 thousand B/D. Imports of other major products were down in excess of 20 percent, as well. Jet kerosine imports fell 32 thousand B/D to 66 thousand B/D; distillate imports declined 56 thousand B/D to 180 thousand B/D; and resid imports were off 149 thousand B/D to 387 thousand B/D.

U.S. product exports have been an area of keener interest since the Gulf crisis began a year ago. While much of the surge in U.S. exports, (particularly jet and distillate fuel) resulted from temporary factors related to war and weather, exports in more recent months have remained slightly above their pre-invasion trend. For July, total exports are estimated to have been up, year to year, by about 250 thousand B/D, roughly two-thirds of which were refined products. For a more in-depth look at longer-term trends

Trends in U.S. Exports of Refined Products

Summary. U.S. refined product exports were trending up even before last August's Iraqi invasion. On average, from 1985 to 1989, these exports increased by about 35 thousand B/D per year from 577 thousand B/D to 717 thousand B/D. Though growth rates were greatest for light products, heavy products (with limited U.S. markets) grew as well, and still accounted for more than half of all product exports. After crisis-related surges between September and March, product exports appear to be returning to levels more consistent with the 1985-89 trend. Amid the export increase, product imports were trending up as well. . . by roughly 50 thousand B/D per year more than the increase in exports. While on the surface, it may seem illogical for imports and exports to be increasing simultaneously, such an occurrence is not unusual. Regional demand differences and transportation logistics, at times, make it economical for the U.S. to both import and export refined products. For exports, the increase has resulted in part from the fact that demand growth has outpaced growth in refinery production abroad, particularly in Japan, Canada and Latin America. A continuation of this, along with refinery capacity constraints in Mexico, could help fuel continued growth in U.S. refined product exports. However, unused refining capacity in the U.S. has been declining over the past decade, and could be further impacted by environmental constraints. One outcome of this might be a reduced potential for further export growth and a tightening up of domestic supplies.

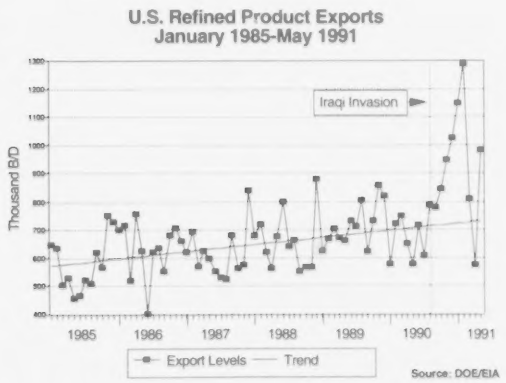


Figure 1

Post-invasion Exports Contrast with Pre-Invasion Trends. but the Surge has Moderated. Between 1985 and 1989, U.S. refined product exports increased, on average, by about 35 thousand B/D (or 5.6 percent) per year. With the exception of gasoline, major product imports increased as well, as transportation logistics and regional demand differences made it economical to both import and export more. Export growth came across the board, but was particularly strong among light products. Exports of gasoline, jet fuel and distillate fuel were up at average annual rates of 42 percent, 18 percent, and 9.4 percent, respectively, compared to average annual growth rates of 5.7 percent for petroleum coke and 2.2 percent for residual fuel. Still, the product export picture is dominated by heavy products, with resid and petroleum coke accounting for roughly 60 percent of the total. And despite the growth, gross exports remain a small share of refined product demand—about 4 percent overall, but only about 3 percent of distillate, 2 percent of jet, and less than 1 percent for gasoline. In the seven months following the Iraqi invasion last August, U.S. refined product exports surged by about 250 thousand B/D, year to year, predominantly in middle distillates. However, the surge resulted primarily from temporary factors (military and weather-related), which ended by March. While Kuwaiti refined product continues to be off world markets, it is not believed that this absence significantly affects the underlying trend growth in demand for U.S. product exports. As evidenced by Figure 1, refined product exports have begun to approach levels consistent with the pre-invasion trend, perhaps slightly higher with surging gasoline exports to Mexico in recent months facilitated by the March shutdown of the 105 thousand B/D Azcapotzalco refinery.

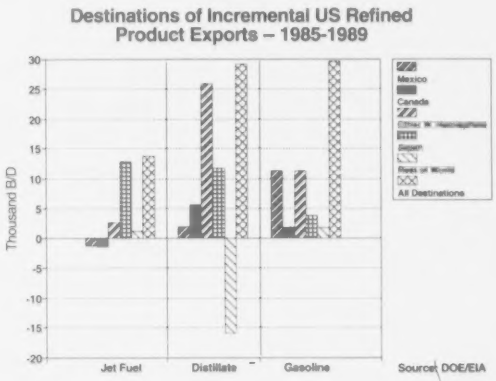


Figure 2

Destinations for Additional U.S. Product Exports. Most of the growth in refined product exports between 1985 and 1989 was destined for Canada, Japan and Latin America. Petroleum product demand has grown more quickly than refinery production in these areas. Between 1985 and 1989, production of refined products in the U.S. grew at roughly the same rate as demand, while demand grew 11 percent more quickly than refinery runs in Japan, 9 percent more quickly in Latin America, and 3 percent more quickly in Canada. Figure 2 highlights how destinations for incremental exports between 1985 and 1989 differed on a product-by-product basis. For gasoline, increased exports to Mexico and other Latin American countries accounted for about three quarters of the total increase. For distillate fuel oil, increased Western Hemisphere exports more than accounted for all of the increase. In the case of jet fuel, increased exports to Japan accounted for over 90 percent of the total growth.

Assessment. Trends in exports are dependent on differential demand and supply conditions at home versus abroad. Petroleum product demand in Japan, Canada and Latin America grew more quickly than refinery production in these areas between 1985 and 1989. With output of refined products increasing in the U.S. over the past several years, American exports have been able to satisfy a portion of the growing import needs of these nations. However, even amid the increase in exports, U.S. imports of refined products trended up as well. While demand growth and capacity constraints abroad could increase the call on U.S. exports, those same forces at home may reduce their availability. Depressed domestic demand could turn around with the resumption of economic growth. And U.S. refinery capacity may become a limiting factor as well, with utilization rates of operating capacity relatively high (having increased from 68.5 percent to 87.1 percent between 1981 and 1990). The imposition of further constraints on available capacity could impact refined product exports, and could tighten domestic product markets as well.

in product exports, see the accompanying article on page 6 of this report.

Refinery Operations

MOST PRODUCTS DROP, BUT GASOLINE OUTPUT STEADY.

Though the declines in deliveries have moderated in the past two months, deliveries have still been down—and refinery activity, after running ahead of a year ago for three months in a row, slipped in July. Input to distillation units dropped 4.1 percent versus one year earlier, following year-to-year increases for the second quarter which had helped to raise product stock levels from lower levels earlier in the year. Production of distillate fuel oil dropped 1 percent, kerosine jet fuel 4.7 percent, and residual fuel oil 6.6 percent from a year earlier. Gasoline output, however, held roughly steady.

Utilization of capacity in operation amounted to about 91 percent, versus about 93 percent in June and 95 percent a year ago. As a percent of reported capacity, the rate is calculated at 88.0 percent, down from 92.4 percent last July.

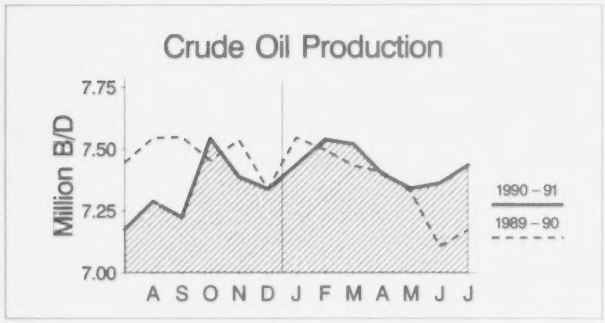
Inventories

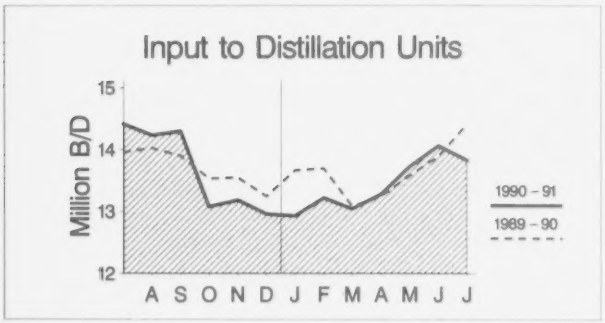
STOCKS CONTINUE TO RISE BUT AT A LESSER RATE.

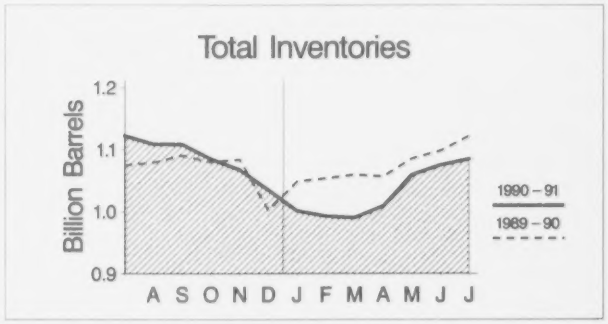
Following the substantial, 85 million barrel build in total inventories during the second quarter, July's inventories rose at a less rapid rate. Though the 10 million barrel increase was less than half the 23 million barrel average for the month, the overall level of inventories at month-end remained slightly above the average level for July of recent years.

With the bulk of the peak summer demand period gone, gasoline inventories, after rising during May and June, slipped 7 million barrels in July. July's ending level of 211 million barrels, though below recent years' inventories for the same month, were slightly above recently-observed lows. Distillate stocks rose 8 million barrels to 122 million barrels, a level slightly above the recent-year average for the month.

Crude oil stocks slipped 4 million barrels to 346 million barrels. Though 34 million barrels or 9 percent lower than last July's higher-than-typical level, they were close to the upper end of the typical historical range of about 330 to 350 million barrels.







1/ Total supply, i.e., production plus imports adjusted for net stock change is equal to total products supplied from primary storage. Total products supplied from primary storage less exports is equal to total domestic products supplied. Information contained in this report is derived from information published in the API Weekly Bulletin and is based on historical analysis of the industry. All data reflect the most current information available to the API and include all previously published revisions.

2/ Includes lease condensate.

3/ API data do not include crude oil imported for the Strategic Petroleum Reserve (SPR) nor crude oil stocks held in the SPR (according to the U.S. Department of Energy, the SPR held approximately 569 million barrels as of July 31, 1991).

ESTIMATED UNITED STATES PETROLEUM BALANCE
(Daily Average in Thousands of 42 Gallon barrels)

Products Supplied/Supply From Primary Storage	JULY			YEAR-TO-DATE		
	1991/1	1990/2	% Change	1991/3R	1990/2	% Change
Products Supplied:						
Total motor gasoline	7,596	7,496	1.3	7,175	7,236	(0.8)
Finished leaded motor gasoline/*	271	406	(33.3)	273	425	(35.8)
Finished unleaded motor gasoline/*	7,325	7,090	3.3	6,902	6,811	1.3
Naphtha-jet	182	147	23.8	176	177	(0.6)
Kerosine-jet	1,286	1,259	2.1	1,260	1,319	(4.5)
Distillate fuel oil	2,739	2,726	0.5	2,929	3,042	(3.7)
Residual fuel oil	1,044	1,280	(18.4)	1,139	1,316	(13.4)
All other oils/4	4,084	4,318	(5.4)	3,970	4,018	(1.2)
Reclassified/5	-210	-142	47.9	-232	-86	169.8
Total domestic products supplied	16,721	17,084	(2.1)	16,417	17,022	(3.6)
Exports	947	696	36.1	1,034	765	35.2
Total products supplied	17,668	17,780	(0.6)	17,451	17,787	(1.9)
Supply:						
Domestic production:						
Crude oil/6	7,435	7,173	3.7	7,432	7,355	1.0
Natural gas liquids	1,637	1,484	10.3	1,651	1,510	9.3
Other supply/7	1,061	849	25.0	1,119	941	18.9
Total domestic supply	10,133	9,506	6.6	10,202	9,806	4.0
Imports:						
Crude oil, total/8	5,969	6,855	(12.9)	5,745	6,227	(7.7)
Canadian	667	659	1.2	752	629	19.6
Other	5,302	6,196	(14.4)	4,993	5,598	(10.8)
Products, total	1,899	2,193	(13.4)	1,741	2,324	(25.1)
Residual fuel oil	387	536	(27.8)	397	557	(28.7)
Other	1,512	1,657	(8.8)	1,344	1,767	(23.9)
Total imports	7,868	9,048	(13.0)	7,486	8,551	(12.5)
Total supply	18,001	18,554	(3.0)	17,688	18,357	(3.6)
Stock change, all oils	333	774	******	237	570	******
Refinery Operations						
Input to crude oil distillation units	13,822	14,414	(4.1)	13,441	13,653	(1.6)
Operable capacity	15,708	15,598	0.7	15,683	15,584	0.6
Refinery utilization (%)/9	88.0	92.4	(4.8)	85.7	87.6	(2.2)
Crude oil runs	13,664	14,212	(3.9)	13,249	13,456	(1.5)

Stocks (millions bbls.)	1991		1990/2	% Change From	
	Jul. 31/10	Jun. 30/10	Jul. 31	Previous month	Year Ago
Crude oil/8	345.9	349.6	379.5	(1.1)	(8.9)
Unfinished oils	110.5	109.2	112.1	1.2	(1.4)
Total motor gasoline/**	210.6	217.9	218.2	(3.4)	(3.5)
Finished leaded motor gasoline/*	7.5	7.4	10.5	1.4	(28.6)
Finished unleaded motor gasoline/*	164.7	170.7	169.2	(3.5)	(2.7)
Naphtha-jet	5.7	5.8	6.3	(1.7)	(9.5)
Kerosine-jet	42.7	42.8	44.6	(0.2)	(4.3)
Distillate fuel oil	121.6	113.3	125.0	7.3	(2.7)
Residual fuel oil	45.4	44.1	49.0	2.9	(7.3)
All other oils	202.8	192.2R	187.7	5.5	8.0
Total all oils	1,085.2	1,074.9R	1,122.4	1.0	(3.3)

/1 Based on API estimated data converted to a monthly basis.
/2 Source: U.S. Department of Energy.
/3 January-May, DOE, June-July, API.
/4 Includes crude losses.
/5 Beginning with January 1981, U.S. Department of Energy began using a new data collection system which encompasses a method to ascertain the amount of product reclassified during the production phase. So that there will be nodouble counting of these volumes, they are subtracted from the total domestic products supplied.
/6 API estimate; includes lease condensate.
/7 Includes Unaccounted-for crude oil, which will reflect withdrawls from the SPR when they occur, processing gain, field production of other hydrocarbons and alcohol.
/8 Data do not include oil imported for the Strategic Petroleum Reserve (SPR) nor crude oil stocks held in the SPR.
/9 Represents "Input to crude oil distillation units" as a percent of "Operable capacity".
/10 Derived by interpolating API weekly stocks data.
/R Revised.
/* Included in motor gasoline.
/** Includes finished leaded, finished unleaded, and motor gasoline blending components stocks.

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Monthly Statistical Report

Prepared by the Finance, Accounting, and Statistics Department

Vol. 15, No. 8

SEPTEMBER 18, 1991

AUGUST 1991

SUMMARY

August's large decline in total deliveries was partly explainable by extraneous factors, but reflects a continued weakness in demand that has, as of yet, not been reversed by any recovery in the economy. A portion of August's unusually large drop in deliveries—at 6.4 percent, the largest so far this year—was due to comparison against a surge in deliveries a year ago. At that time, unusually strong deliveries for distillate and other products likely reflected precautionary purchases in light of developments in the Middle East following Iraq's invasion of Kuwait on August 2. That surge had been followed by a substantial dropoff in deliveries in the latter part of the year as the effects of higher petroleum prices and economic recession took hold.

Nevertheless, even without the year-ago surge, this August's deliveries would have still declined by roughly 3 percent. Similarly, distillate's 13.5 percent decline for August still would have been 4 to 5 percent, and gasoline's 4 percent drop would have been perhaps 3 percent. Thus, total deliveries' drop, even on an adjusted basis, displayed a weakness greater than the roughly 2 percent declines of the most recent prior months. It seems that the ambivalence in data on the rate at which the economy is recovering from the most recent recession—downward revisions in GNP versus continued positive indications from the leading indicators, for example—is being reflected in a corresponding wavering in deliveries data. Regardless of the exact trajectory of the economy over the past several months, recent years' data suggest that economic growth would have to exceed 2 percent before growth in petroleum demand would be observed.

Following several months of year-to-year increases, domestic crude oil production slipped 1.1 percent in August. The decline was entirely the result of a drop in lower 48 production, although Alaskan production equalled year-ago levels only because North Slope production then was temporarily depressed by field maintenance and enhancement projects.

Though total imports experienced their first year-to-year increase in twelve months and amounted to 51 percent of domestic deliveries for the month, the increase was essentially a reflection of contrasting inventory behavior this August versus last. With domestic deliveries declining and domestic production steady over the past several months, the underlying trend of imports has still been one of year-to-year declines.

Though input to refinery distillation units slipped 1.5 percent in August from a year ago, emphasis on gasoline production kept output of that product nearly even with a year ago while gasoline stocks continued near the lower end of their recent historical range. Crude stocks, however, though down from last August's higher-than-usual levels, were slightly above more typical levels for the month. Distillate stocks, at 128 million barrels, were up 6 million barrels from July and in line with typical ending levels for August.

PRODUCT SUPPLIED [1]

Gasoline

DELIVERIES WEAKEN. Gasoline deliveries' uncommon strength over the past several months dissipated markedly in August. Following the May-July period, which actually averaged a surprising 0.7 percent higher than a year ago, August's deliveries dropped 4.0 percent—or around 3 percent if the comparison is made against a more typical level of deliveries for the year-ago-period.

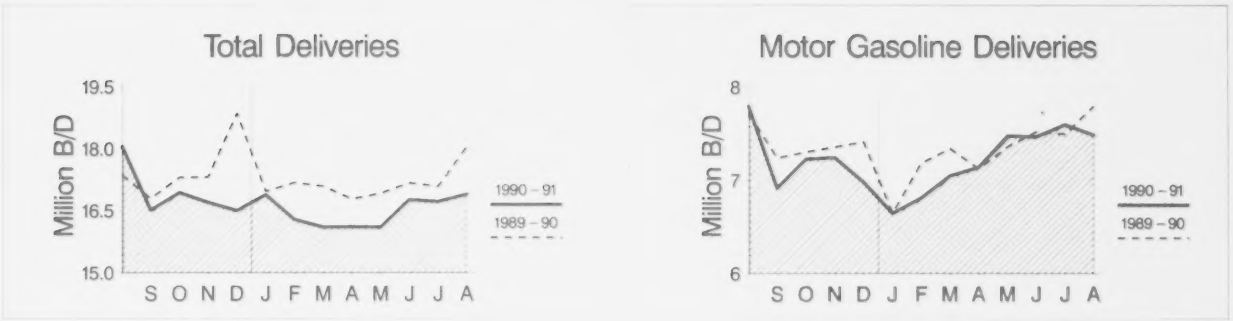
Additional data on travel add weight to the view that deliveries over the past several months, until August, were running above underlying consumption trends. The most recent data on miles traveled, for example, show a roughly 1 percent increase for June. This was slightly higher than in prior months, which had hovered around a half-percent or so.

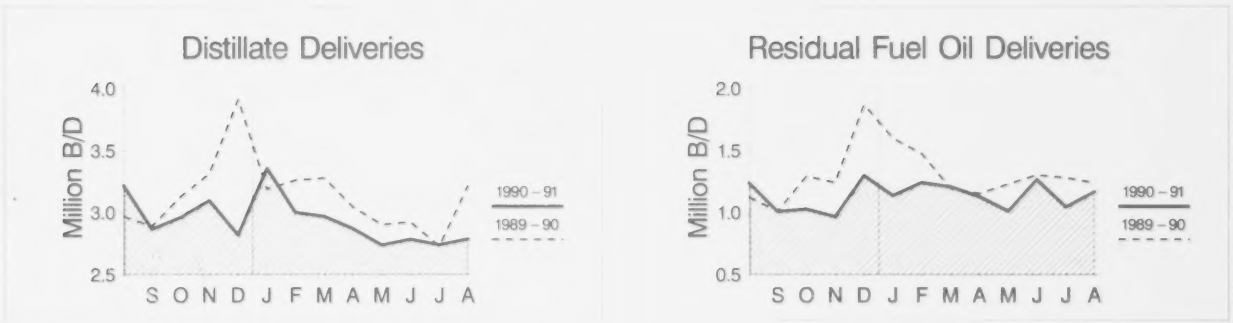
But with continued gains in average fuel efficiency, this figure would have still implied a decline in consumption of 1 or 2 percent, rather than the increase in deliveries actually observed. Compared against levels of consumption implied by the travel data, actual gasoline deliveries for May and June averaged more than 3 percent higher, and July's deliveries continued at that higher level. August's deliveries, however, appeared to return to levels more on trend with the data prior to May.

Distillates

YEAR-AGO SURGE EXAGGERATES AUGUST'S DECLINE. Due primarily to the crisis-related surge in deliveries a year ago, distillate fuel supplied fell a sharp 13.5 percent during

	API ESTIMATES AUGUST		YEAR-TO-DATE	
	Million B/D	Percent Change	Million B/D	Percent Change
Total domestic deliveries	16.9	(6.4)	16.5	(3.9)
Crude production[2]	7.2	(1.1)	7.4	0.6
Total imports[3]	8.6	0.9	7.6	(10.7)
Stocks (million bbl)[3]	1,091	(1.6)	na	na





August. However, even adjusting for that surge, deliveries would have been down about 4 percent, year to year for the month—a slightly larger drop than underlying consumption indicators would suggest.

Mixed signals on trucking activity in recent months have made a trend in underlying diesel consumption difficult to decipher. Rebounding from a slight decline in June, trucking tonnage reportedly picked up sharply, year to year, during July. However, given the sensitivity of diesel demand to economic growth, July's tonnage increase is thought to have been anomalous. Even if the economy grew on a seasonally-adjusted basis during the month, economic activity was likely still down, year to year. Highway diesel demand, which during the summer accounts for about half of distillate deliveries, is estimated to have been flat at best during August. Rail demand, thought to have been down more than 4 percent during the first seven months of the year, was about flat in August as well, as rail ton-miles matched year-ago levels for the first time in almost a year.

Diesel fuel consumption has been down more than gasoline during the recent recession because of different usage patterns. While a substantial portion of gasoline usage is tied to personal transportation (estimated at about 80 percent), most of the diesel fuel consumption is more directly tied to economic activity—transporting everything from agricultural and processed food products, building materials, petroleum products, manufactured products, and more—and accounting for a quarter of intercity freight.

Diesel vehicles account for only about 2 percent of the vehicle population, but about 15 percent of vehicle fuel use—the result of different usage patterns and vehicle size. The average passenger car travels roughly 10,000 miles per year, versus over 40,000 per year for diesels (excluding light-duty models). Since the most heavily-used diesel-powered vehicles on the road weigh ten times or more (empty) than the typical passenger car, it is not surprising that they get only about one fourth the number of miles per gallon. Diesel vehicles over 26,000 pounds account for about half of diesel trucks, 75 percent of diesel miles traveled and an estimated 90 percent of vehicle consumption of diesel fuel.

Residual Fuel Oil

HOT WEATHER BOLSTERS DEMAND. After a sharp decline in July, resid deliveries fell more moderately in August. At 5.8 percent, the year-to-year decline for the month was comparable to the trend during the second quarter of the year. While warmer weather and nuclear electric plant shutdowns supported demand for power generation in the East, buyer reaction to the new California sales tax on bunker fuels continued to work against demand.

A continuation of the heat wave in the resid-intense Mid-Atlantic region pushed cooling degree days up nearly 25 percent from last year. As a result, power generation in these states grew at about 4 percent, year to year. The higher temperatures came at the same time nuclear facilities in the Mid-Atlantic and in New England were scheduling downtime. Together, these factors are estimated to have contributed to an increase of perhaps 25 thousand B/D in resid purchases by utilities in the region.

Meanwhile, reaction to California's July 15 extension of an 8.25 percent state/local sales tax to bunker fuels reportedly had a sizeable impact on bunker sales there during August. Because California represents roughly two-fifths of U.S. bunker fuel sales, (more than a quarter of which are thought to be loaded on vessels entering port specifically to take on fuel), the potential impact of the tax is not insignificant. It is unclear whether the decline in bunkerings during the month represents the beginning of an ongoing shift to other ports in the U.S. and abroad, or whether it results from short-term buyer resistance to the tax. Even with the tax,

prices in California remained competitive with prices in Singapore and Panama, suggesting that, given limited markets for resid in the U.S., refiners may have been forced to absorb much of the tax. It is unclear at this time whether the tax encouraged more resid exports.

Kerosine Jet Fuel

TRAVEL SHOWS SIGNS OF IMPROVEMENT. After falling by 5 percent over the year's first half, deliveries of kerosine jet fuel were up in August for the second consecutive month. While growth for the month, at less than 1 percent, was minimal, it came on top of above-trend deliveries a year ago. Evidence of a recovery in commercial air travel continues to build, but year-to-year growth in underlying consumption for the month is not likely, particularly given the record air travel in August 1990.

Industry traffic statistics have shown general improvement in passenger travel since March, but airlines have been able to absorb some of the additional passengers by filling otherwise empty seats. Load factors are thought to have picked up about 5 points (on a seasonally-adjusted basis) from war-time lows early in the year, and in recent months, have surpassed those of a year ago. A compilation of company traffic reports for August suggests that, among majors, miles-flown grew about 3-4 percent, year to year. However, when accounting for the absence of Eastern Airlines, miles-flown were likely flat, or down slightly, versus a year ago.

Thanks in part to declines in air mail, air cargo shipments have continued to be weak. Up nearly 5 percent in 1990, air mail shipments have declined at a comparable rate thus far in 1991. And while moderating in the past month or two, the declines nonetheless continue. As a result, air freight, which accounts for roughly a quarter of all air ton-miles, has been up less than one percent in recent months, after growing at double digit rates during the late 1980s.

Other Oils

DOWN 7 PERCENT FROM STRONG YEAR-AGO LEVELS. Deliveries of "other oils" dropped 7.0 percent for the month, and, as in July, mainly reflected unusually strong deliveries a year ago. We estimate that, without the short-term fluctuations in both this year's and last year's series, the year-to-year decline in deliveries of "other oils" over the past several months would have been only 1 to 2 percent.

Deliveries of "other oils" are traditionally at their seasonal high during August through October, as deliveries of asphalt, though declining from their summer peak, remain reasonably strong at a time when deliveries of propane are picking up in anticipation of the winter heating season. The net result is a typical autumn pattern of deliveries of "other oils" about 10 percent higher than the seasonal low in the spring. This pattern typically adds about 2 percent or 400 thousand B/D to total petroleum deliveries during the fall compared with the spring.

SUPPLY [1/]

Production

DECLINE RESUMES. Domestic crude oil production dropped 1.1 percent, or 83 thousand B/D, in August following three months of year-to-year increases. In the lower 48, production slipped 1.5 percent to less than 5.5 million B/D. Alaskan production, though matching levels which had been temporarily depressed by field maintenance and enhancements a year ago, was down about 100 thousand B/D from July. Part of the drop was due to temporary slowdowns in pipeline flow necessitated by the replacement of an 8.5 mile section of pipeline about 160 miles south of Prudhoe Bay as part of a corrosion control program.

Imports

UP FOR FIRST TIME IN TWELVE MONTHS. In contrast to a year-to-year decline of more than one million B/D in July, total imports were up nearly 80 thousand B/D, or 0.9 percent, in August versus a year ago. It was the first year-to-year increase in twelve months, and brought the import share of domestic demand to 51.1 percent. However, just as smaller-than-typical stock builds during July had manifested themselves in below-trend imports for that month, larger-than-typical stock builds during August contributed to the imports increase. Given the continued increase in liquids production and decline in deliveries, the underlying need for imports remained lower than a year ago. Had inventories behaved more typically for the month, we estimate imports of about 8.2 million B/D would have been required, compared to the roughly 9.1 million B/D required last August, if estimated in a comparable manner.

Higher imports of crude, up 325 thousand B/D from last August, accounted for the year-to-year growth in total imports. At nearly 6.7 million B/D, crude imports approached levels among their highest since North Slope production came on line in 1977.

While product imports continued to pick up from February's low of about 1.35 million B/D, they were still down on a year-to-year basis in August. Their roughly 250 thousand B/D, or 11.3 percent drop for the month was less than half the rate of decline seen during the first seven months of 1991. A sharp drop in imports of distillate fuels, due in part to weak demand, accounted for nearly two-thirds of this decline. Gasoline imports actually increased, and imports of jet fuel and residual fuel were each off by less than 10 percent. Imports of diesel and heating fuels dropped 154 thousand B/D to 139 thousand B/D—with the exception of February, their lowest monthly level in 6 years. Finished motor gasoline imports increased 22 thousand B/D to 335 thousand B/D; jet kerosine imports fell 6 thousand B/D to 75 thousand B/D; and resid imports fell 46 thousand B/D to 528 thousand B/D.

Refinery Operations

INPUT SLIPS BUT GASOLINE OUTPUT CLOSE TO YEAR AGO. Emphasis on gasoline production continued in August, with output of that product nearly matching that of a year ago despite a 1.5 percent drop in input to distillation units. Distillate fuel oil output, in contrast, fell nearly 5 percent from last August's unusually strong levels that had paralleled the surge in that product's deliveries. Production of residual fuel oil roughly equaled that of a year ago. Output of kerosine jet fuel, deviating from a pattern made up mostly of declines in recent months, rose 4.8 percent.

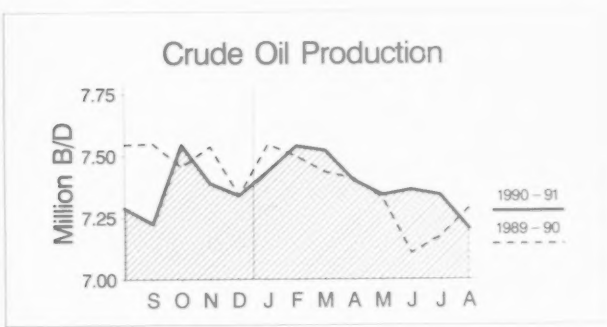
Utilization of capacity in operation averaged in the low 90s for August, down from nearly 95 percent a year ago. On the basis of

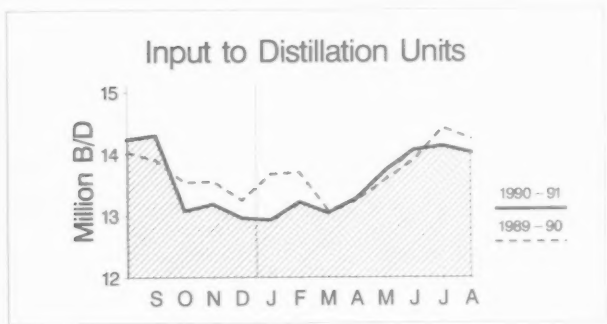
reported capacity, utilization for the month is calculated at 89.2 percent.

Inventories

DISTILLATE RISES DURING AUGUST, GASOLINE STEADY. August's 19 million barrel increase put total stocks at 1,091 million barrels, or slightly above the average of recent prior Augusts. Gasoline inventories held steady, nearly matching year-ago levels at 211 million barrels and continuing near the lower end of their observed range of recent years. Crude oil stocks, on the other hand, though down 21 million barrels from last August's unusually high levels, at 348 million barrels, were still above the 330-340 million barrel range typical of August for recent prior years.

Distillate inventories' 128 million barrel level, up 6 million barrels during the month, were typical for the end of August. Despite the attention often focused on distillate inventories as the winter heating season approaches, stocks have played a relatively minor role in distillate supply in recent years. For the previous five October-March periods, inventory draws have accounted for 6 percent of supplies, while net imports have accounted for about 5 percent. The bulk of supplies, 89 percent, has come from current refinery output.





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2/ Includes lease condensate.

3/ API data do not include crude oil imported for the Strategic Petroleum Reserve (SPR) nor crude oil stocks held in the SPR (according to the U.S. Department of Energy, the SPR held approximately 569 million barrels as of August 31, 1991).

ESTIMATED UNITED STATES PETROLEUM BALANCE
(Daily Average in Thousands of 42 Gallon barrels)

Products Supplied/Supply From Primary Storage	AUGUST			YEAR-TO-DATE		
	1991[1]	1990[2]	% Change	1991[3R]	1990[2]	% Change
Products Supplied:						
Total motor gasoline	7,485	7,796	(4.0)	7,211	7,308	(1.3)
Finished leaded motor gasoline/*	304	412	(26.2)	277	424	(34.7)
Finished unleaded motor gasoline/*	7,181	7,384	(2.7)	6,934	6,884	0.7
Naphtha-jet	205	189	8.5	179	179	0.0
Kerosine-jet	1,371	1,363	0.6	1,280	1,325	(3.4)
Distillate fuel oil	2,784	3,218	(13.5)	2,903	3,065	(5.3)
Residual fuel oil	1,166	1,238	(5.8)	1,147	1,306	(12.2)
All other oils[4]	4,181	4,498	(7.0)	4,024	4,078	(1.3)
Reclassified[5]	-296	-251	17.9	-260	-107	143.0
Total domestic products supplied	16,896	18,051	(6.4)	16,484	17,154	(3.9)
Exports	1,037	850	22.0	1,044	776	34.5
Total products supplied	17,933	18,901	(5.1)	17,528	17,930	(2.2)
Supply:						
Domestic production:						
Crude oil[6]	7,204	7,287	(1.1)	7,391	7,346	0.6
Natural gas liquids	1,728	1,575	9.7	1,660	1,518	9.4
Other supply[7]	972	1,056	(8.0)	1,074	956	12.3
Total domestic supply	9,904	9,918	(0.1)	10,125	9,820	3.1
Imports:						
Crude oil, total[8]	6,682	6,357	5.1	5,855	6,243	(6.2)
Canadian	719	676	6.4	757	635	19.2
Other	5,963	5,681	5.0	5,098	5,608	(9.1)
Products, total	1,945	2,192	(11.3)	1,779	2,307	(22.9)
Residual fuel oil	528	574	(8.0)	423	559	(24.3)
Other	1,417	1,618	(12.4)	1,356	1,748	(22.4)
Total imports	8,627	8,549	0.9	7,634	8,550	(10.7)
Total supply	18,531	18,467	0.3	17,759	18,370	(3.3)
Stock change, all oils	598	-434	******	231	440	******
Refinery Operations						
Input to crude oil distillation units	14,016	14,234	(1.5)	13,580	13,728	(1.1)
Operable capacity	15,708	15,701	0.0	15,757	15,599	1.0
Refinery utilization (%)[9]	89.2	90.7	(1.7)	86.2	88.0	(2.0)
Crude oil runs	13,878	14,142	(1.9)	13,332	13,544	(1.6)

Stocks (millions bbls.)	1991		1990[2]	% Change from	
	Aug. 31[10]	Jul. 31[10]	Aug. 31	Previous month	Year Ago
Crude oil[8]	348.3	345.9	369.5	0.7	(5.7)
Unfinished oils	109.6	110.5	110.8	(0.8)	(1.1)
Total motor gasoline/**	210.6	210.6	209.7	0.0	0.4
Finished leaded motor gasoline/*	6.5	7.5	10.5	(13.3)	(38.1)
Finished unleaded motor gasoline/*	167.6	164.7	161.9	1.8	3.5
Naphtha-jet	5.1	5.7	5.7	(10.5)	(10.5)
Kerosine-jet	42.4	42.7	42.7	(0.7)	(0.7)
Distillate fuel oil	127.6	121.6	129.8	4.9	(1.7)
Residual fuel oil	46.3	45.4	49.0	2.0	(5.5)
All other oils	201.2	190.1R	191.7	5.8	5.0
Total all oils	1,091.1	1,072.5R	1,108.9	1.7	(1.6)

/1 Based on API estimated data converted to a monthly basis.
/2 Source: U.S. Department of Energy.
/3 January-June, DOE, July-August, API.
/4 Includes crude losses.
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/6 API estimate; includes lease condensate.
/7 Includes Unaccounted-for crude oil, which will reflect withdrawls from the SPR when they occur, processing gain, field production of other hydrocarbons and alcohol.
/8 Data do not include oil imported for the Strategic Petroleum Reserve (SPR) nor crude oil stocks held in the SPR.
/9 Represents "Input to crude oil distillation units" as a percent of "Operable capacity".
/10 Derived by interpolating API weekly stocks data.
/R Revised.
/* Included in motor gasoline.
/** Includes finished leaded, finished unleaded, and motor gasoline blending components stocks.

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Monthly Statistical Report

Prepared by the Finance, Accounting, and Statistics Department

Vol. 15, No. 9

OCTOBER 16, 1991

SEPTEMBER 1991

SUMMARY

One of the consequences of making year-to-year comparisons with petroleum data is that, at times, shifts in year-to-year growth rates say as much about developments in the year-ago period as they do about the most recent month.

Thus, this September's 1.3 percent increase in total domestic deliveries—the first increase in more than a year—is an indication more of the dropoff in deliveries a year ago than of a marked change in the trend of consumption in recent months. The dropoff last year accompanied the substantially higher petroleum prices following the outbreak of the Iraq/Kuwait crisis in early August, as well as a weakening economy in the latter part of the year. That demand weakness continued into early 1991.

Deliveries this year—though down compared to the year-ago period by an average 3.8 percent through August—have been gradually strengthening, quarter by quarter, once allowances are made for typical seasonal patterns and for weather deviations. By September, the year-to-year comparison turned positive, partly because of above-trend deliveries this September, but mainly because deliveries in the year-ago period were beginning to fall sharply. Furthermore, if this year's moderately rising, month-to-month trend continues, year-to-year increases against weak deliveries in the latter part of last year would likely be the result.

Still, September's deliveries appeared somewhat stronger than might have been expected based on recent trends. Gasoline deliveries in particular, with a nearly 5 percent jump, year to year, were higher than would be easily explainable from consumption indicators. We estimate that underlying petroleum consumption in September was still likely flat to down against year-ago levels.

September's crude oil production rose 1.5 percent. Much of the increase was in Alaska, where production a year ago was still temporarily down as facilities enhancement efforts were being completed. Lower 48 output was up only about half a percent for the month.

In contrast with a year ago, total inventories rose in September by 14 million barrels to 1,095 million barrels—down from a year ago but higher than in recent prior Septembers. The contrasting stock behavior provided most of the explanation for a 9.8 percent year-to-year increase in imports. Underlying import requirements in September, however, were likely close to those of one year earlier.

At refineries, emphasis on distillate production led to a nearly 5 percent increase in output of that product even though input to distillation units declined 2.2 percent. Distillate stocks rose by 10 million barrels to 137 million barrels, a level slightly above a year ago and the highest for September in five years.

Article on distillate fuel oil supplies begins on page 7.

PRODUCT SUPPLIED [1]

Gasoline

DELIVERIES' JUMP CONTRASTS WITH TRAVEL DATA.

For gasoline, deliveries' dropoff a year ago, in response to sharply higher prices and the beginnings of recession, is hardly enough to explain the 4.6 percent, year-to-year jump in deliveries for this September. Much of the increase reflects puzzling strength for deliveries this September.

While it is true that, with hints of economic recovery, prices nearly 15 percent lower than a year ago on an inflation-adjusted basis, and comparisons against depressed demand in the year-ago period, year-to-year changes for September's deliveries would be expected to be less weak than earlier in the year. But the month's deliveries are still at odds with the latest data on miles traveled, which have continued to rise only marginally. Once the continued improvement in fleet efficiency is taken into account, these data imply that gasoline consumption, even against weak levels a year ago, would still have been expected to be down slightly, year to year, in September.

Meanwhile, regular unleaded's share has continued to lose ground to higher-octane grades, particularly premium unleaded, in recent months. The shift, however, has been gradual. Premium's share had dropped from over 22 percent a year ago July to less than 16 percent last October as consumers moved to lower-priced grades in response to higher prices following the Iraq invasion of Kuwait.

	API ESTIMATES SEPTEMBER		YEAR-TO-DATE	
	Million B/D	Percent Change	Million B/D	Percent Change
Total domestic deliveries	16.7	1.3	16.5	(3.2)
Crude production[2]	7.3	1.5	7.4	0.8
Total imports[3]	8.1	9.8	7.7	(9.0)
Stocks (million bbl)[3]	1,095	(1.2)	na	na

The most recent Department of Energy data for July show premium's share has inched back about halfway, to a little less than 19 percent. Regular unleaded's share moved in the opposite direction, to less than 68 percent in July from 71 percent last October. Meanwhile, mid-grade unleaded's share, though rising slightly, still only accounted for about 10 percent of sales. Leaded regular accounted for only about 3 percent of the market.

Distillates

TRANSPORTATION USE RECOVERING SLOWLY. On the surface, September's 1.3 percent increase in distillate deliveries appears to represent a marked improvement on the double digit decline seen a month ago. But, adjusting for the earlier-than-usual transfer of stocks from primary to non-primary storage a year ago—as inferred from August and September 1990 delivery, transportation and weather data—we still estimate a slight decline in consumption, year to year, for September.

On a seasonally-adjusted basis, transportation diesel demand has picked up from lows this past spring, albeit slowly and sporadically. Still, demand is thought to be down on a year-to-year basis. While railroad consumption appears to have roughly matched year-ago levels in recent months, best indicators for trucking demand suggest a drop of about 2-3 percent, year to year. Industrial demand, roughly five percent of the total distillate market, was also likely down, given an estimated decline in industrial output, and a continued shift in industrial energy use away from petroleum fuels.

With weather getting cooler, the focus in the distillate picture is shifting out of transportation fuels and into heating fuels. The New England states, which account for more than a quarter of U.S. heating fuel demand, got an early jump on the heating season during September, with about a 20 percent year-to-year increase in heating degree days. Even so, heating fuel consumption there was likely only about a sixth of what it has been on average during peak winter months. For a more in-depth analysis of the heating fuel outlook for the coming season, see the accompanying article on page 7 of this report.

Residual Fuel Oil

UP 10 PERCENT OVER YEAR-AGO LOWS. For resid, as was the case with gasoline and distillate fuels, depressed deliveries last September distort year-to-year comparisons this September. Growth for the month, at 10.3 percent, contrasts with nearly a 4 percent decline for the third quarter as a whole, and with the 5-6 percent decline trend in consumption estimated over the past several months.

Demand for resid, more so than for other major fuels, fell sharply in the months following the Iraqi invasion. Last September for example, accompanying a nearly 50 percent year-to-year increase in average resid prices paid by utilities was a roughly 25 percent decline in consumption of heavy oil by utilities. Resid bunker demand, sensitive to water-borne petroleum imports, fared little better last year, as these imports slid nearly 10 percent.

Indicators of underlying consumption were mixed in September. While an increase in power generation of 4-5 percent in the Eastern U.S. along with more competitive resid prices no doubt meant an increase in residual-fired generation, more abundant natural gas supplies this time of year likely moderated any surge in resid-burn. In shipping markets, U.S. exports continue to grow, but petroleum imports are still trending down moderately (on a stock-adjusted basis), and given continued buyer resistance to California's new excise tax, bunker demand is likely still trending down.

Not to be overlooked in residual fuel market analysis is the industrial sector, which accounts for roughly 15 percent of demand on an annual basis. Over time, declines in industrial resid demand have parallelled declines in utility demand. Between 1979 and 1989, for example, both fell by roughly 50 percent, resulting in part from conversion of many resid-fired generators to dual-fired ones. With U.S. industrial output believed to have been down approximately 2 percent, year to year, in September, industrial resid consumption was likely down as well, particularly if the trend over the past decade provides any indication. The aforementioned 50 percent drop in industrial resid consumption over the 1980s coincided with a nearly 25 percent increase in industrial output and a less than 15 percent drop in industrial consumption of all energy.

Kerosine Jet Fuel

PASSENGER TRAFFIC INCHING UPWARDS. Contrasting with moderate growth during the previous 2 months, jet fuel deliveries were off 3.2 percent in September. However, with miles flown on commercial airlines in September estimated to have been up about 1 percent, year to year—the first monthly increase since last December—the deliveries' decline appears to have resulted, in part, from surges in military jet fuel liftings a year ago, and perhaps from contrasting secondary inventory behavior this year versus last. Despite September's decline, jet fuel supplied was still up 1.4 percent during the third quarter.

That growth in passenger travel has resumed amid year-to-year declines in economic activity indicates that airline travel incentives have succeeded in attracting marginal travellers. The Air Transport Association reports that yields (i.e. revenues/passenger mile) have been down 1-2 percent, year to year, in recent months. This decline in yields reflects an increase in the number of discounted seats sold—more than 95 percent of the total in recent months versus about 92 percent for the same period a year ago.

As was the case prior to the Gulf War, international travel has been the catalyst for much of the traffic growth. While down more severely than domestic travel during the war months, international travel has witnessed more hardy growth since the spring, and was up an estimated 7 percent in September.

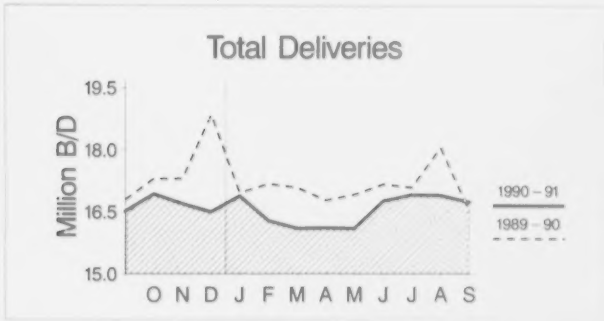
As mentioned above, September's delivery decline is believed to have resulted in part from above-trend military deliveries a year ago, associated with the U.S. airlift to the Persian Gulf, when domestic jet fuel purchases by the Army, Navy, and Air Force were up an estimated 30-35 thousand B/D above trend. Military jet fuel purchases accounts for perhaps 5 percent of total jet fuel deliveries; however, if the apparent return of growth in commercial travel continues, and some U.S. military bases are closed as proposed, that share is likely to decline.

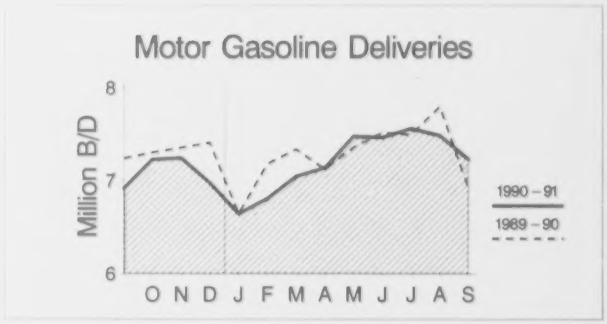
Other Oils

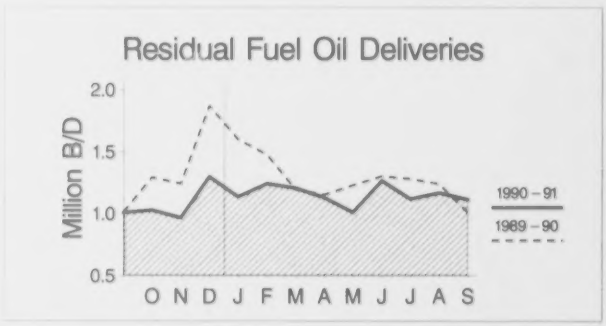
MODERATE DECLINE TREND CONTINUES. Deliveries of "other oils" fell 3.2 percent for September, following an even larger year-to-

year drop in August. This put the decline for the quarter as a whole at 3.4 percent, contrasting with a slight increase during the first half.

Deliveries of other oils, however, have not been quite as weak as might appear, because deliveries for the third quarter a year ago, including September, were unusually vigorous. Smoothing out the short-term variability in deliveries, we estimate an underlying year-to-year decline of around 2 percent.







SUPPLY [1/]

Production

COMPLETIONS DOWN FOR NATURAL GAS, FLAT FOR OIL.

September's domestic crude oil production was up 1.5 percent or nearly 110 thousand B/D versus a year ago. However, the bulk of the increase was in Alaska, where year-ago production was still down while the summer's special field enhancement activities were being completed. In the lower 48, crude oil production was only a half percent ahead of the year-ago level.

Well completions in the third quarter dropped 11 percent, year to year, according to the latest API estimates. This was mainly the result of a 28 percent drop for natural gas completions to among the lowest quarterly levels in two years, reflecting weakness in wellhead natural gas prices. Oil completions, though down about 10 percent from the first quarter's uptick, were up slightly year to year. The weakness of natural gas activity was particularly apparent in exploratory completions, where gas fell 38 percent, nearly twice the rate for exploratory oil completions.

Imports

STOCK BEHAVIOR CONTRIBUTES TO YEAR-TO-YEAR RISE.

Contrasts in primary and non-primary inventory behavior this September versus last help explain the 9.8 percent, or nearly 720 thousand B/D year-to-year increase in petroleum imports for the month. Still, imports of both crude and products have continued to recover from last December's lows. For September, with liquids production and exports up by comparable amounts, year to year, and with actual consumption estimated to have been about flat, the underlying need for imports was likely close to that of last September.

Although falling demand was one reason for low import levels last September, inventory behavior was the primary one. Following the Iraqi invasion, in the face of higher crude and product prices on world markets, refiners and bulk terminal operators opted, in many cases, to substitute stock draws for imports. As a result, rather than builds of about a half million B/D which are more typical for the month, primary inventories were drawn upon modestly. Adjusting for this and for inferred differences in non-primary inventory builds, it appears that there was little year-to-year change in import requirements for September.

While it is true that September's 17.4 percent increase in product imports resulted largely from the sharp drops a year ago, it is also true that these imports have been recovering, on a seasonally-adjusted basis, since February. In September, at roughly 2 million B/D, they were in line with levels seen in recent years for the month.

Resid imports, down particularly sharply a year ago, led the product surge—up 192 thousand B/D to 505 thousand B/D. Likewise, motor gasoline imports were up sharply; but, even with the 81 thousand B/D year-to-year increase, more attractive prices across the Atlantic kept the level, at 335 thousand B/D, in the

lower part of the range experienced for September in recent years. Meanwhile, distillate imports increased for the first time in over a year, up 39 thousand B/D to 265 thousand B/D, more in line with historical seasonal levels, and jet fuel imports increased 3 thousand B/D to 75 thousand B/D.

Refinery Operations

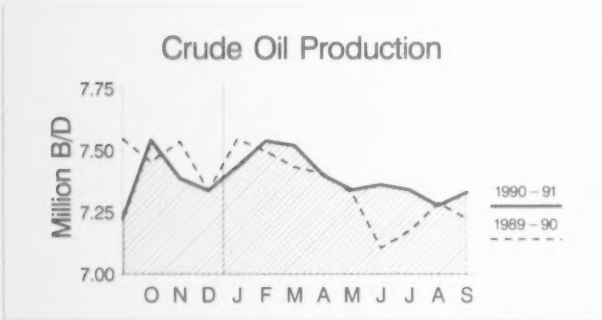
FOR DISTILLATE, OUTPUT JUMPS NEARLY 5 PERCENT... With turnaround requirements less than usual for the fall, September's refinery activity maintained levels comparable to August's. But though input to distillation units was relatively high for the time of year, it fell 2.2 percent short of even stronger levels a year ago. Utilization of operating capacity still averaged around 92 percent for the month, compared with levels a year ago among the highest observed in recent years at nearly 95 percent. Utilization of reported capacity in September averaged 89 percent.

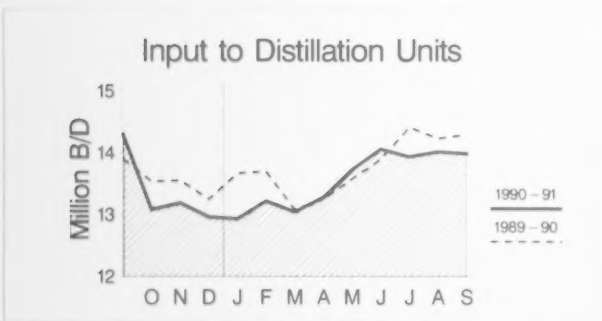
Despite the year-to-year decline in refinery input, emphasis on distillate production resulted in a 4.8 percent increase in output of that product to 3.11 million B/D, the highest level for September in twelve years. Gasoline output declined 2.2 percent, residual fuel oil output, 4.7 percent, while kerosine jet fuel production was nearly flat.

Inventories

...AND STOCKS REACH A 5-YEAR HIGH FOR SEPTEMBER. In September, product stocks rose by more than crude stocks fell—resulting in a net rise in total stocks of 14 million barrels, about typical for the month. Though down 13 million barrels from a year ago, September's 1,095 million barrel level of total stocks was higher than the 1,070-1,090 million-barrel range of the previous three Septembers.

Distillate stocks grew by 10 million barrels to 137 million barrels. This was slightly above year-ago levels and the highest level entering the heating season in five years. Gasoline stocks rose 5 million barrels to 215 million barrels, while crude oil stocks dropped back 9 million barrels to 339 million barrels after August's 5 million barrel rise.





1/ Total supply, i.e., production plus imports adjusted for net stock change is equal to total products supplied from primary storage. Total products supplied from primary storage less exports is equal to total domestic products supplied. Information contained in this report is derived from information published in the API Weekly Bulletin and is based on historical analysis of the industry. All data reflect the most current information available to the API and include all previously published revisions.

2/ Includes lease condensate.

3/ API data do not include crude oil imported for the Strategic Petroleum Reserve (SPR) nor crude oil stocks held in the SPR (according to the U.S. Department of Energy, the SPR held approximately 569 million barrels as of September 30, 1991).

ESTIMATED UNITED STATES PETROLEUM BALANCE
(Daily Average in Thousands of 42 Gallon barrels)

Products Supplied/Supply From Primary Storage	SEPTEMBER			YEAR-TO-DATE		
	1991/1	1990/2	% Change	1991/3R	1990/2	% Change
Products Supplied:						
Total motor gasoline	7,230	6,914	4.6	7,209	7,264	(0.8)
Finished leaded motor gasoline/*	265	326	(18.7)	278	413	(32.7)
Finished unleaded motor gasoline/*	6,965	6,588	5.7	6,931	6,851	1.2
Naphtha-jet	177	205	(13.7)	177	182	(2.7)
Kerosine-jet	1,287	1,329	(3.2)	1,288	1,325	(2.8)
Distillate fuel oil	2,900	2,864	1.3	2,893	3,043	(4.9)
Residual fuel oil	1,111	1,007	10.3	1,152	1,273	(9.5)
All other oils/4	4,287	4,427	(3.2)	4,080	4,117	(0.9)
Reclassified/5	-261	-235	11.1	-267	-121	120.7
Total domestic products supplied	16,731	16,511	1.3	16,532	17,083	(3.2)
Exports	942	847	11.2	1,035	784	32.0
Total products supplied	17,673	17,358	1.8	17,567	17,867	(1.7)
Supply:						
Domestic production:						
Crude oil/6	7,331	7,224	1.5	7,392	7,333	0.8
Natural gas liquids	1,730	1,597	8.3	1,664	1,527	9.0
Other supply/7	1,006	1,167	(13.8)	1,065	979	8.8
Total domestic supply	10,067	9,988	0.8	10,121	9,839	2.9
Imports:						
Crude oil, total/8	6,086	5,664	7.5	5,878	6,180	(4.9)
Canadian	644	632	1.9	738	635	16.2
Other	5,442	5,032	8.1	5,140	5,545	(7.3)
Products, total	1,994	1,698	17.4	1,787	2,240	(20.2)
Residual fuel oil	505	313	61.3	436	532	(18.0)
Other	1,489	1,385	7.5	1,351	1,708	(20.9)
Total imports	8,080	7,362	9.8	7,665	8,420	(9.0)
Total supply	18,147	17,350	4.6	17,786	18,259	(2.6)
Stock change, all oils	474	-8	******	219	392	******
Refinery Operations						
Input to crude oil distillation units	13,985	14,298	(2.2)	13,638	13,791	(1.1)
Operable capacity	15,708	15,702	0.0	15,752	15,611	0.9
Refinery utilization (%)/9	89.0	91.1	(2.3)	86.6	88.3	(1.9)
Crude oil runs	13,819	14,104	(2.0)	13,390	13,605	(1.6)

Stocks (millions bbls.)	1991		1990/2	% Change from	
	Sep. 30/10	Aug. 31/10	Sep. 31	Previous month	Year Ago
Crude oil/8	338.8	348.0R	342.6	(2.6)	(1.1)
Unfinished oils	109.6	109.6	112.7	0.0	(2.8)
Total motor gasoline/**	215.3	210.6	228.6	2.2	(5.8)
Finished leaded motor gasoline/*	6.9	6.5	11.3	6.2	(38.9)
Finished unleaded motor gasoline/*	170.3	167.6	176.5	1.6	(3.5)
Naphtha-jet	5.0	5.1	6.1	(2.0)	(18.0)
Kerosine-jet	45.8	42.4	43.8	8.0	4.6
Distillate fuel oil	137.4	127.6	136.0	7.7	1.0
Residual fuel oil	47.8	46.3	49.4	3.2	(3.2)
All other oils	195.3	191.2R	189.4	2.1	3.1
Total all oils	1,095.0	1,080.8R	1,108.6	1.3	(1.2)

/1 Based on API estimated data converted to a monthly basis.
/2 Source: U.S. Department of Energy.
/3 January-July, DOE. August-September, API
/4 Includes crude losses.
/5 Beginning with January 1981, U.S. Department of Energy began using a new data collection system which encompasses a method to ascertain the amount of product reclassified during the production phase. So that there will be no double counting of these volumes, they are subtracted from the total domestic products supplied.
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/* ncluded in motor gasoline.
/** Includes finished leaded, finished unleaded, and motor gasoline blending components stocks.

ESTIMATED UNITED STATES PETROLEUM BALANCE
(Daily Average in Thousands of 42 Gallon barrels)

Products Supplied/Supply From Primary Storage	3RD QUARTER		
	1991/1	1990/2	% Change
Products Supplied:			
Total motor gasoline	7,427	7,407	0.3
Finished leaded motor gasoline/*	287	382	(24.9)
Finished unleaded motor gasoline/*	7,140	7,025	1.6
Naphtha-jet	183	180	1.7
Kerosine-jet	1,335	1,317	1.4
Distillate fuel oil	2,776	2,937	(5.5)
Residual fuel oil	1,132	1,177	(3.8)
All other oils/3	4,264	4,414	(3.4)
Reclassified/4	-270	-209	29.2
Total domestic products supplied	16,847	17,223	(2.2)
Exports	981	797	23.1
Total products supplied	17,828	18,020	(1.1)
Supply:			
Domestic production:			
Crude oil/5	7,316	7,228	1.2
Natural gas liquids	1,688	1,551	8.8
Other supply/6	1,040	1,022	1.8
Total domestic supply	10,044	9,801	2.5
Imports:			
Crude oil, total/7	6,241	6,299	(0.9)
Canadian	657	656	0.2
Other	5,584	5,643	(1.0)
Products, total	1,900	2,031	(6.5)
Residual fuel oil	484	476	1.7
Other	1,416	1,555	(8.9)
Total imports	8,141	8,330	(2.3)
Total supply	18,185	18,131	0.3
Stock change, all oils	357	111	*****
Refinery Operations			
Input to crude oil distillation units	13,980	14,316	(2.3)
Operable capacity	15,712	15,667	0.3
Refinery utilization (%)/8	89.0	91.4	(2.6)
Crude oil runs	13,799	14,153	(2.5)

Stocks (millions bbls.)	3RD QUARTER		
	1991/9	1990/2	% Change
Crude oil/7	338.8	342.6	(1.1)
Unfinished oils	109.6	112.7	(2.8)
Total motor gasoline/**	215.3	228.6	(5.8)
Finished leaded motor gasoline/*	6.9	11.3	(38.9)
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Naphtha-jet	5.0	6.1	(18.0)
Kerosine-jet	45.8	43.8	4.6
Distillate fuel oil	137.4	136.0	1.0
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/** Includes finished leaded, finished unleaded, and motor gasoline blending components stocks.

DISTILLATE SUPPLY CAPABILITY AND THE CURRENT HEATING SEASON

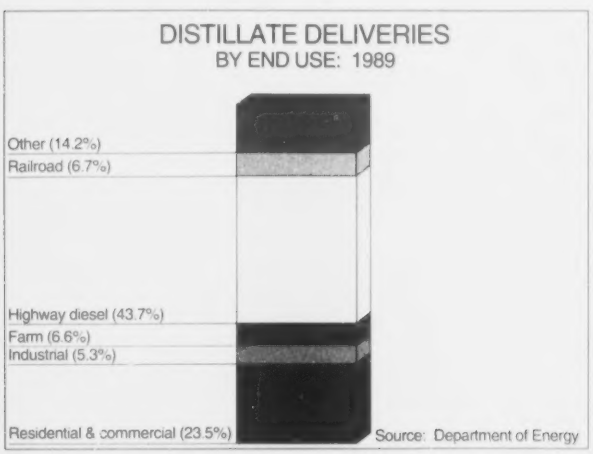
This article examines supply capability for distillate fuel oil over the coming heating season and concludes that, barring unforeseen disruptions, supplies from refineries, imports, and inventories appear adequate to meet demand within ranges likely to occur. Furthermore, it notes that the risk-coping mechanisms that have developed in recent years in response to large but short-lived changes in demand or supply have proved to be effective in managing the risks inherent in today's petroleum markets.

Background

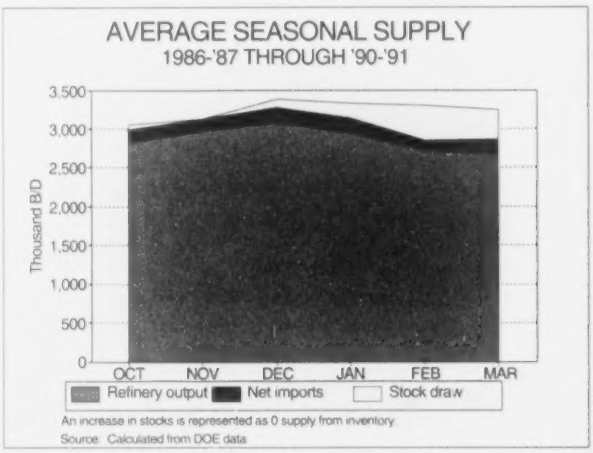
Heating oil accounts for a relatively small portion of overall distillate fuel oil demand in the U.S.—amounting to only about a fifth of the total on an annual basis. The remainder includes fuels for highway, rail and water transportation, as well as industrial, farm, off-highway, and electric utility uses. Nevertheless, the distillate supply situation is always of particular interest at this time of year, since the extremely seasonal nature of heating demand raises distillate fuel oil deliveries as a whole an average of half a million B/D higher in the October-March period than for the remainder of the year.

So far this year, deliveries have been down an average 5 percent or 150 thousand B/D from the same period in 1990, mainly the result of economic recession coupled with higher prices early in the year. Although the first quarter's weather was colder than the year-ago period, it was still quite mild and also contributed to weaker-than-usual heating oil demand. We estimate the underlying trend in consumption for the third quarter, once various temporary factors are accounted for, to have been down about 2 percent, year to year.

As for the coming season, preliminary industry forecasts typically run from 3.2 to 3.4 million B/D, averaging around 3.3 million B/D. Though this would represent a roughly 10 percent year-to-year increase, it should be noted that, for the reasons already mentioned—prices, the economy, and weather—deliveries last season were down nearly 10 percent to 3.0 million B/D from the previous season.



Thus, the 3.3 million B/D figure really represents a bounce back to levels typical of recent prior years. In addition, we estimate that unusually cold weather, such as would occur only about 5 percent of the time, could add 90 thousand B/D to demand over the heating season. Based on these figures, with both stronger-than-anticipated underlying demand and extremely cold weather, deliveries levels approaching 3.5 million B/D, though perhaps unlikely, are at least possible. Short-term, deliveries could reach higher levels, perhaps as high as December 1989's 3.9 million B/D, but such a monthly level has occurred only once in recent years.



Refineries

Refineries have traditionally been the principle source of distillate supplies, accounting for an average 89 percent over October to March in recent years. Inventory draws have accounted for 6 percent, and net imports, 5 percent. The situation last winter departed from the typical pattern more than usual—with exceptionally weak domestic demand being met entirely from refinery production and stock draws without recourse, on a net basis, to imports. In fact, with warm weather and economic recession domestically, war-related demand outside the U.S., and a severe cold spell in Europe, the U.S. was actually a net exporter of distillate last winter. The amounts, however, were small in relation to domestic demand—net exports amounted to about 2 percent of deliveries over October to March.

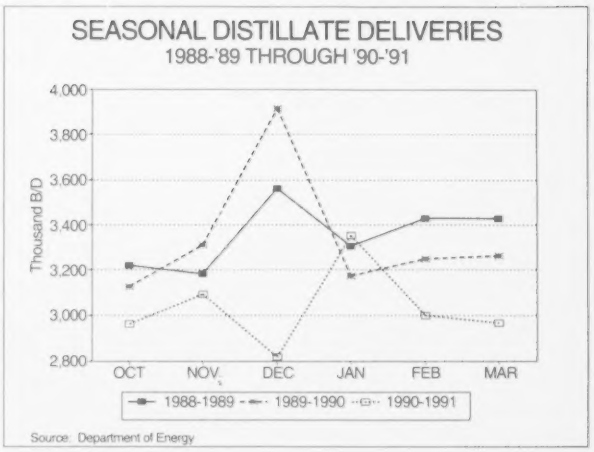
Recent history on refinery operations and yields provides some background as to where supply capability from refineries currently stands. Single-month distillate yields have ranged as high as nearly 25 percent of input to distillation units, though for the season as a whole, the most recent observed high was 23.3 percent during the 1985-86 season. Refinery runs averaging 14 million B/D for a six-month period, though quite strong, have been experienced as well, and would still allow for necessary turnarounds and downtime for normal maintenance and repairs.

These figures yield an estimated supply capability from refineries of over 3.25 million B/D. For shorter periods, higher levels could likely be achieved. It should be noted that the figures used in this calculation are high by historical standards, and the harder refineries are pushed to produce distillate, the more likely output of gasoline and other products could be hindered.

Inventories

At the end of September, distillate stocks stood at 137 million barrels—more than 50 million barrels above the 85 million barrel figure commonly accepted as the minimum operating level. Over the following six months, this would allow for a potential net drawdown at a rate of about 280 thousand B/D. Stock draws during recent seasons have ranged from 130 to 240 thousand B/D.

On a short-term basis, larger stock draws than this have not been uncommon. If inventories stay near their current level through the end of the year (which would be a typical pattern), a January stock draw equivalent to about 800 thousand B/D would still leave enough in inventory to fulfill typical patterns for the remainder of the season. This, combined with short-term refinery production capability, indicates "surge" supply capability from refineries and inventories of over 4 million B/D.



Imports

Net imports of distillate have traditionally played a small but not insignificant role in U.S. distillate supply. With the U.S. accounting for only about a fifth of world distillate consumption, however, international markets and the availability of imports are subject to many other influences besides developments in the U.S. market. This makes estimates of supply capability from imports subject to much more uncertainty than for domestic sources.

In particular, developments among the Soviet Republics, whose distillate exports to both Eastern and Western Europe have traditionally accounted for about a quarter of international trade, could affect the call on distillate from the world's other exporters—and thus, the availability of distillate imports for U.S. buyers. However, available information indicates that shipments to Western Europe, at least, have so far been continuing in line with prior patterns. Certainly, refinery problems or strikes in other parts of the world, or unusually warm or cold weather in Europe, are all additional factors that can cause significant swings in the availability of imports.

Estimates of supply capability from imports are thus by necessity quite imprecise. But a conservative estimate would be something above current net import levels, which have often been minimal in recent months, and perhaps somewhat below recent observed historical levels. Except for last season, net imports in recent years have run around 250 thousand B/D for the October-March period.

However, our estimates of supply capability of about 3.25 million B/D from refineries and .28 million B/D from stocks come to 3.53 million B/D, enough to supply the average projection of 3.3 million B/D in deliveries even before accounting for imports. As mentioned earlier, with higher-than-anticipated demand and a one-in-twenty cold winter, deliveries would be calculated at as much as 3.5 million B/D. With domestic supply capability of 3.5 million B/D from refineries and inventories and perhaps an additional 0.1-0.2 million B/D from imports, supply capabilities still appear adequate even in this less-than-likely demand case.

Concluding Observations

Beyond the basic supply/demand arithmetic is the question of risk. Although in the long run, supplies have been available to meet existing levels of demand, it has been the short-run developments—such as record cold weather or interruptions in Mideast supplies, to name but two—that have given rise to significant volatility in petroleum markets in recent years.

This substantial uncertainty has transformed petroleum markets as mechanisms have been developed to cope. Crude oil contracts have shifted to more flexible, formula-based pricing; the substantial growth of futures markets has extended price-hedging opportunities even, at times, to the retail level; inventory buffers, notably the U.S. Strategic Petroleum Reserve, have increased the potential to lessen the impact of disruptions and ease the adjustment process. All these mechanisms, along with governments' increased reliance on markets to respond to disruptions, have increased petroleum markets' capability to cope with risk.

In sum, barring unforeseen disruptions, distillate supply capabilities over the coming heating season appear adequate for demand within ranges likely to be observed. Even in the event of unexpected developments, the mechanisms which have developed to cope with these inherent uncertainties have substantially reduced the economic cost of these risks to petroleum markets.